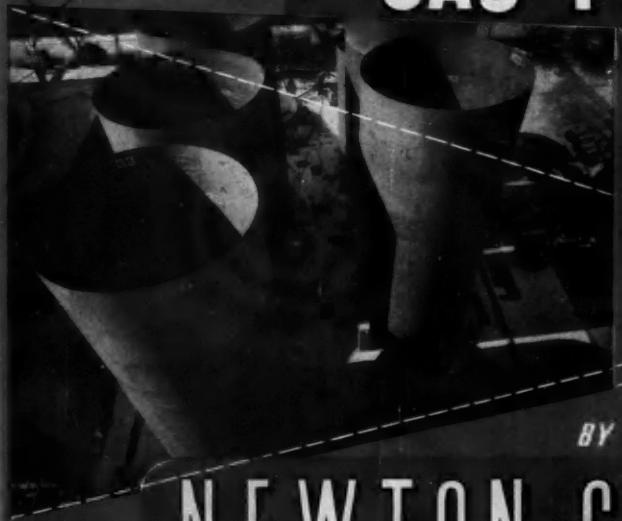
TECHNOLOGY DEPT.

Gas Journal

VOL. 275. 105TH YEAR. LONDON, JULY 8, 1953. NO. 4701. PRICE 1/3

WHICH EVER WAY YOU LOOK AT IT
YOU WILL SEE
PROGRESS
IN
GAS PURIFIERS
AT DOVER

Photographs by courtesy of
The South Eastern Gas Board.



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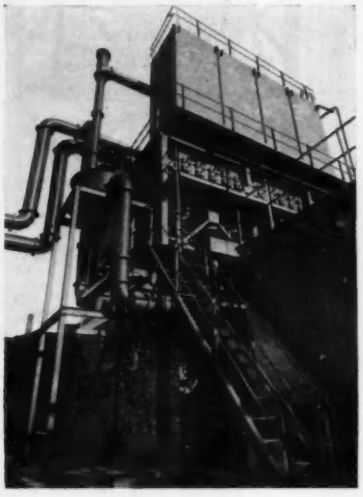
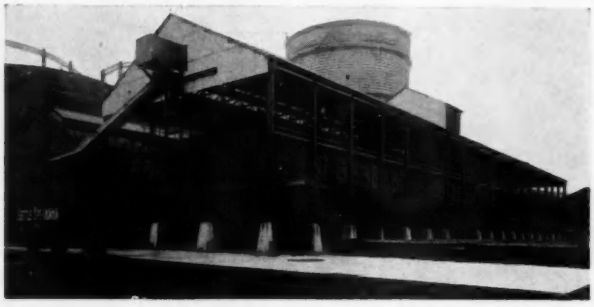
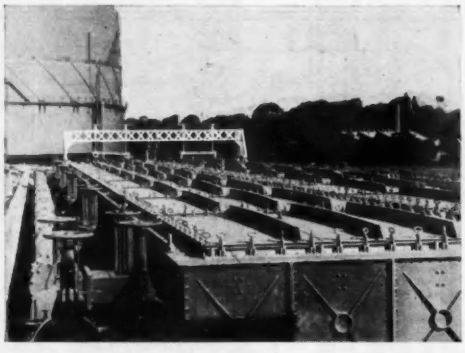




These illustrations show various types of Purifier Installations made and erected by DEMPSTERS of MANCHESTER.



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- *Plinth drawer for shelves or pans.*
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- *Choice of attractive finishes and oven capacities.*

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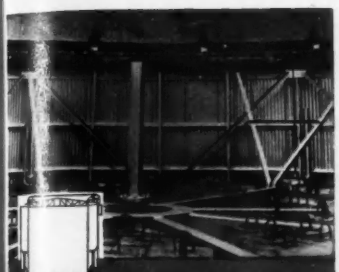
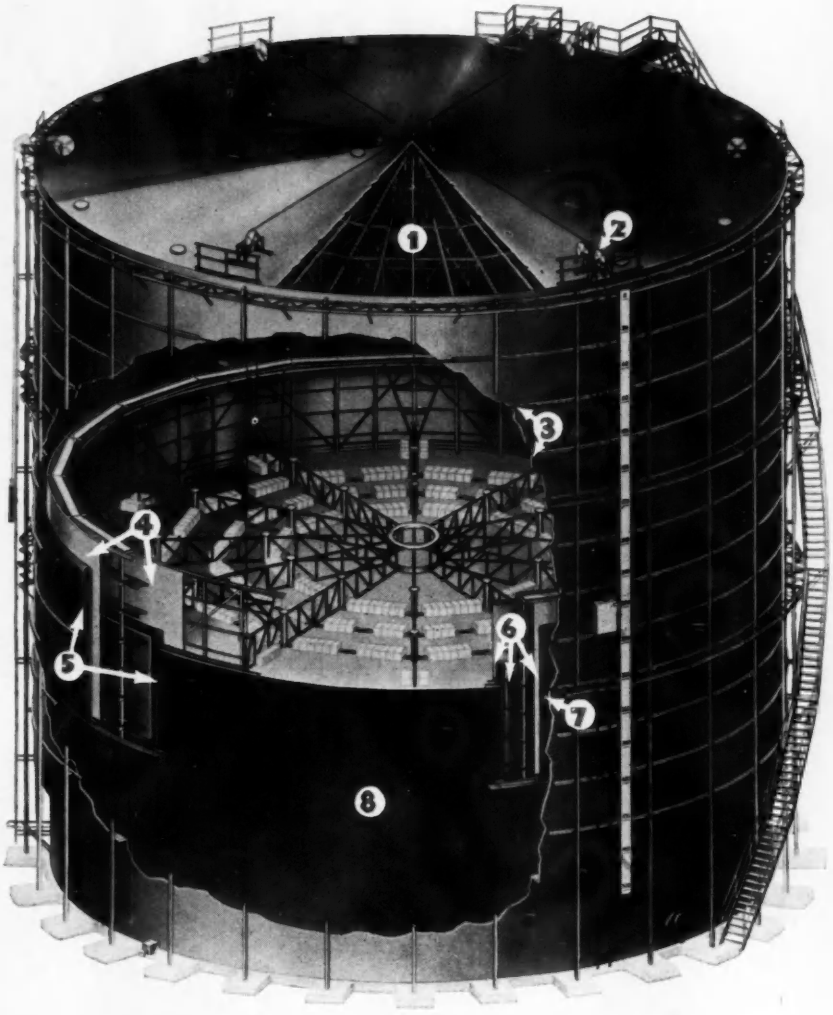


EMPTY, showing top of piston and corrugated fender. Note weights on top of piston to regulate pressure

HALF FULL position, showing inflated seal constructed of a synthetic rubber coated fabric

FULL position, view of mechanically operated relief valve. Releases gas if holder capacity is exceeded



Features of the WIGGINS Dry Seal Gasholder

The Wiggins Gasholder operates on the principle of piston displacement. A frictionless, movable piston floats on the confined gas, rising and falling with changes in volume. The seal—a synthetic rubber-coated fabric—is protected against wear by ample clearances. The system requires practically no maintenance and no replacements. The Wiggins Gasholder is a structure free of unsightly framework.

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3 The section of the shell above the piston is completely ventilated.

4 Wide clearances prevent friction.

5 The gas-tight seal remains unaffected by weather.

6 Fenders protect the seal when under pressure and guide it on to the side walls without friction.

7 The shell is gas-tight up to the seal connection.

8 Foundations are simple and inexpensive as only the shell weight has to be supported.

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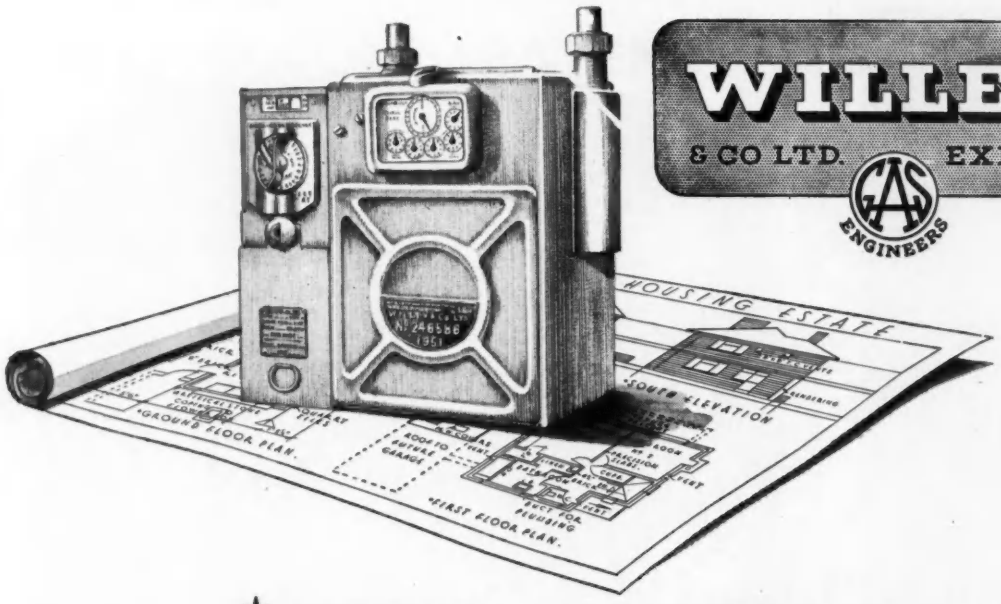

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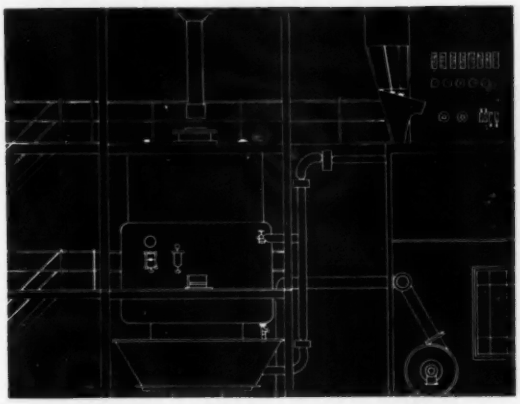
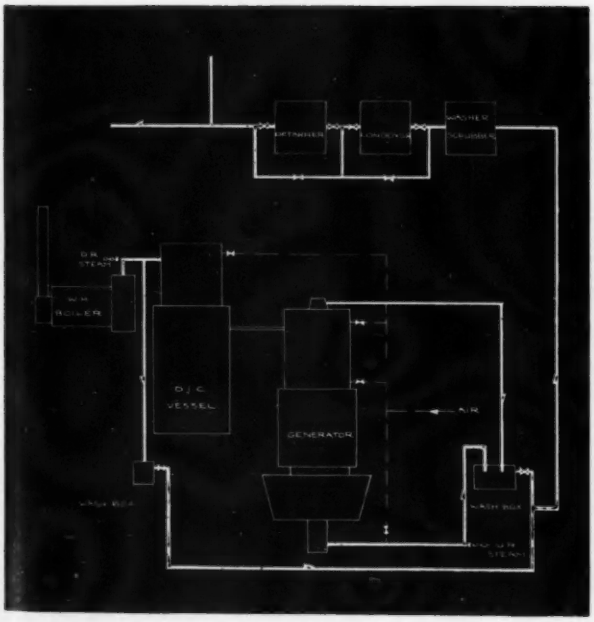
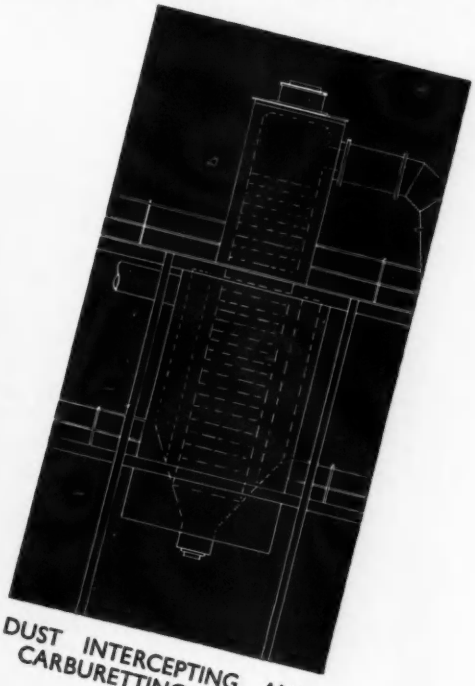


CARBURETTED WATER GAS



FLOW DIAGRAM



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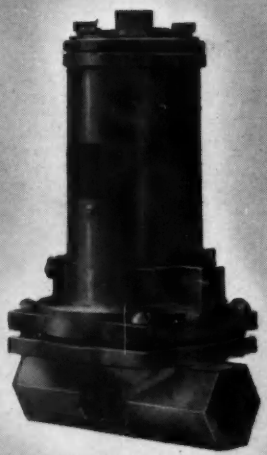
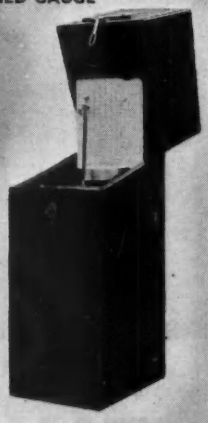


STEAM PRESSURE OPERATED GAS CONTROL VALVE

RELAY VALVE



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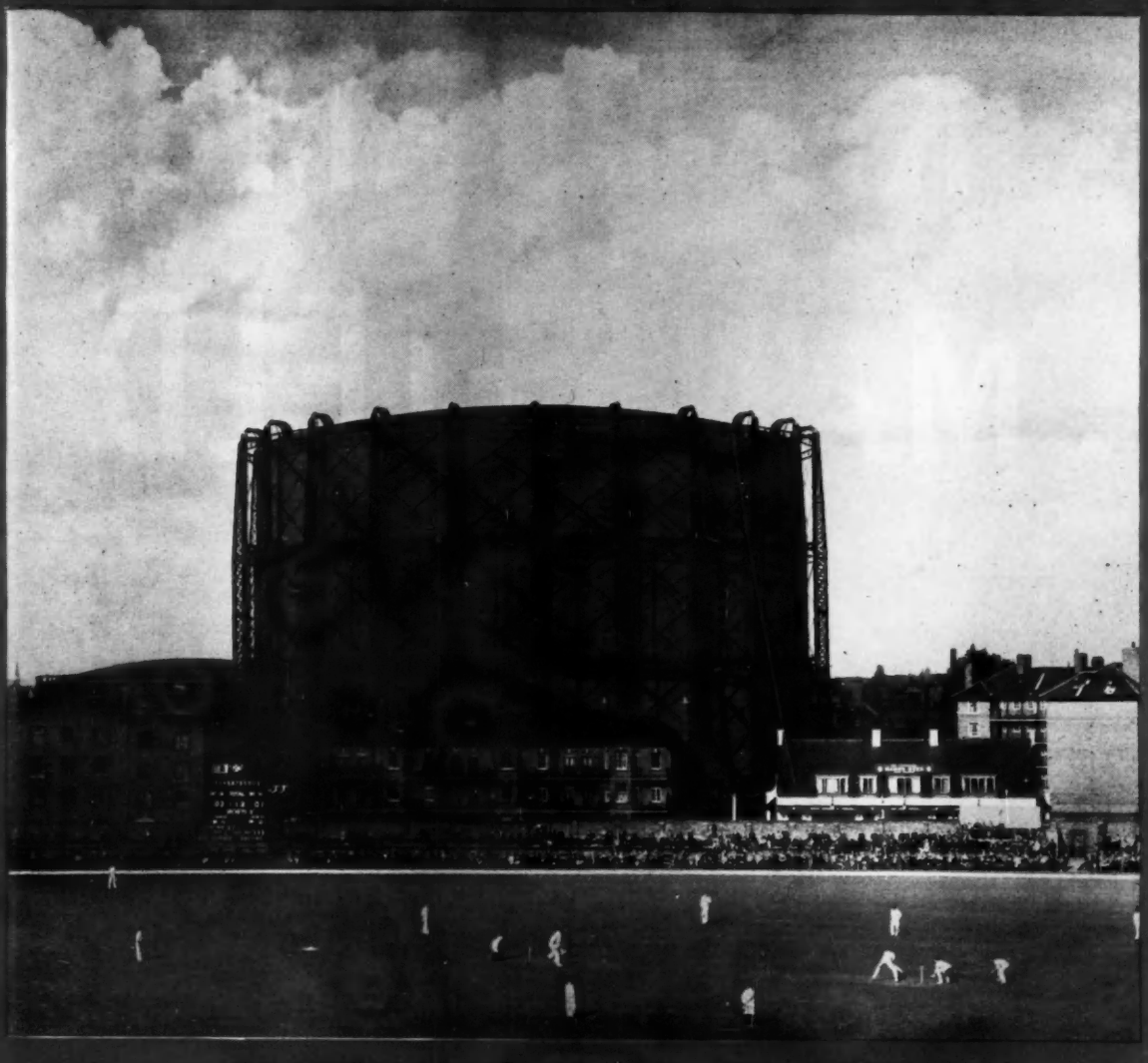

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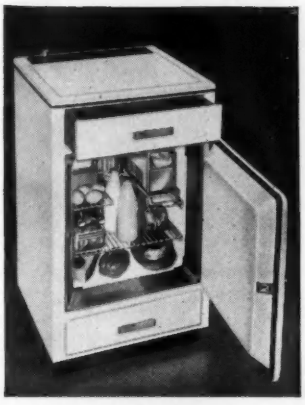

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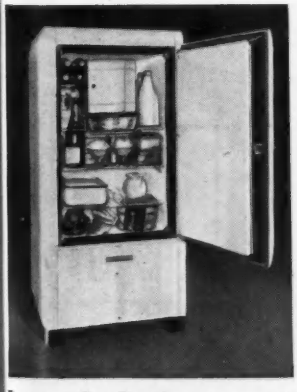

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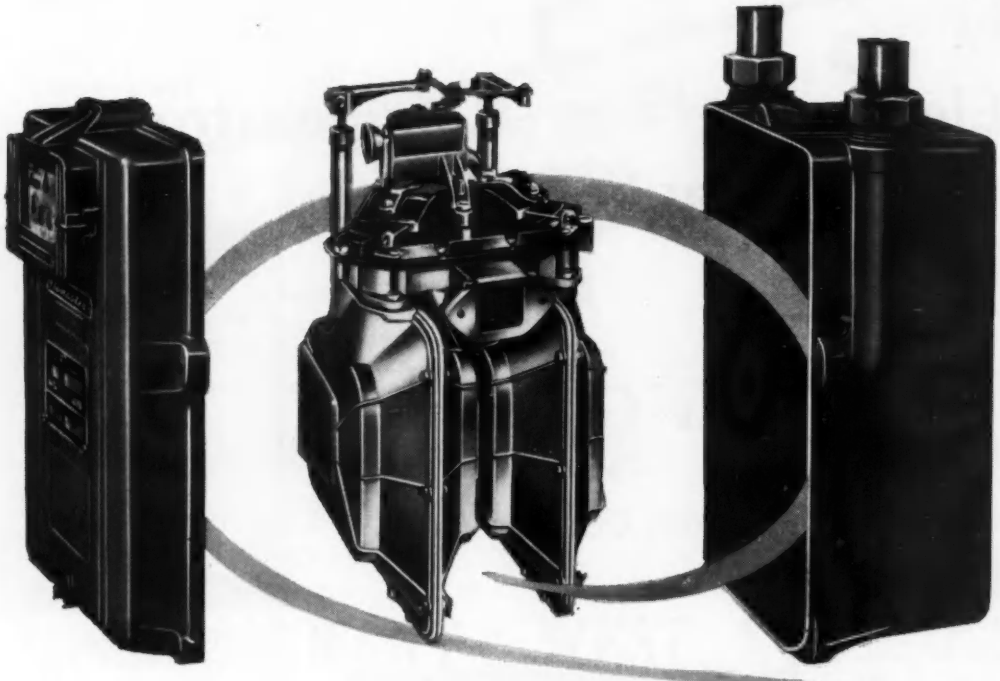

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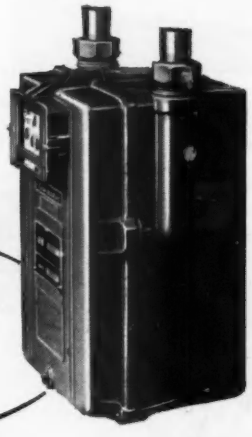

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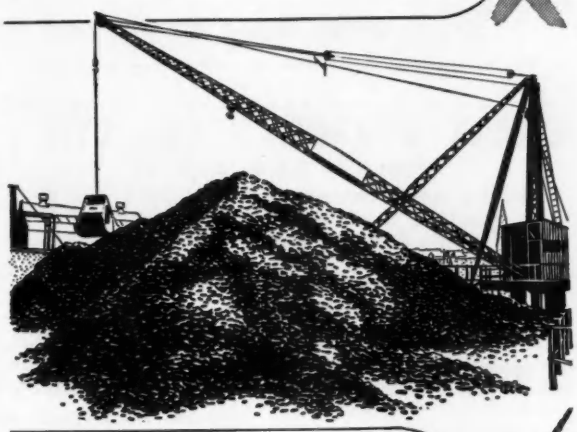
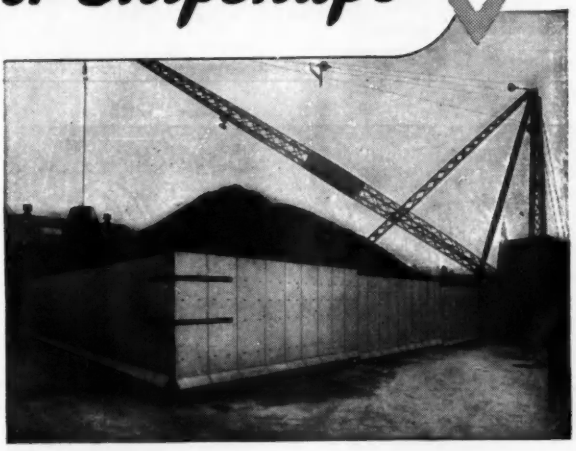


or Shipshape



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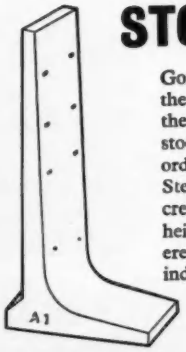

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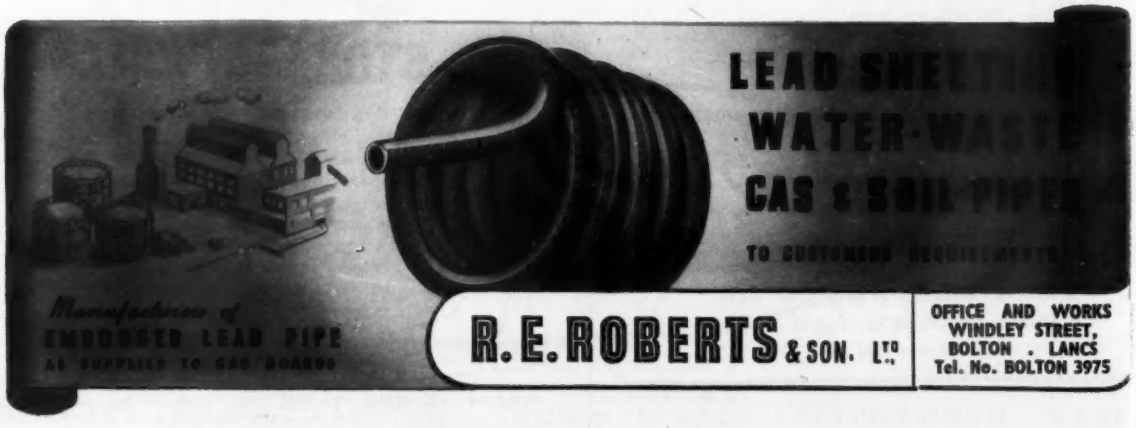

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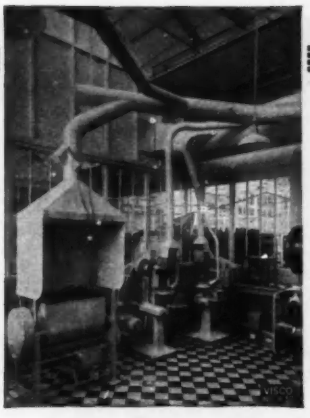

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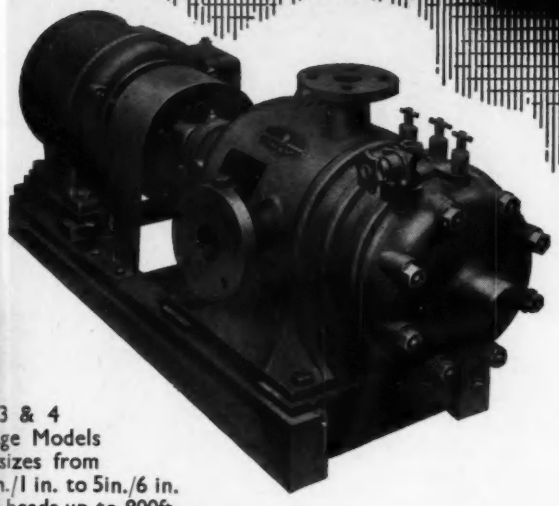

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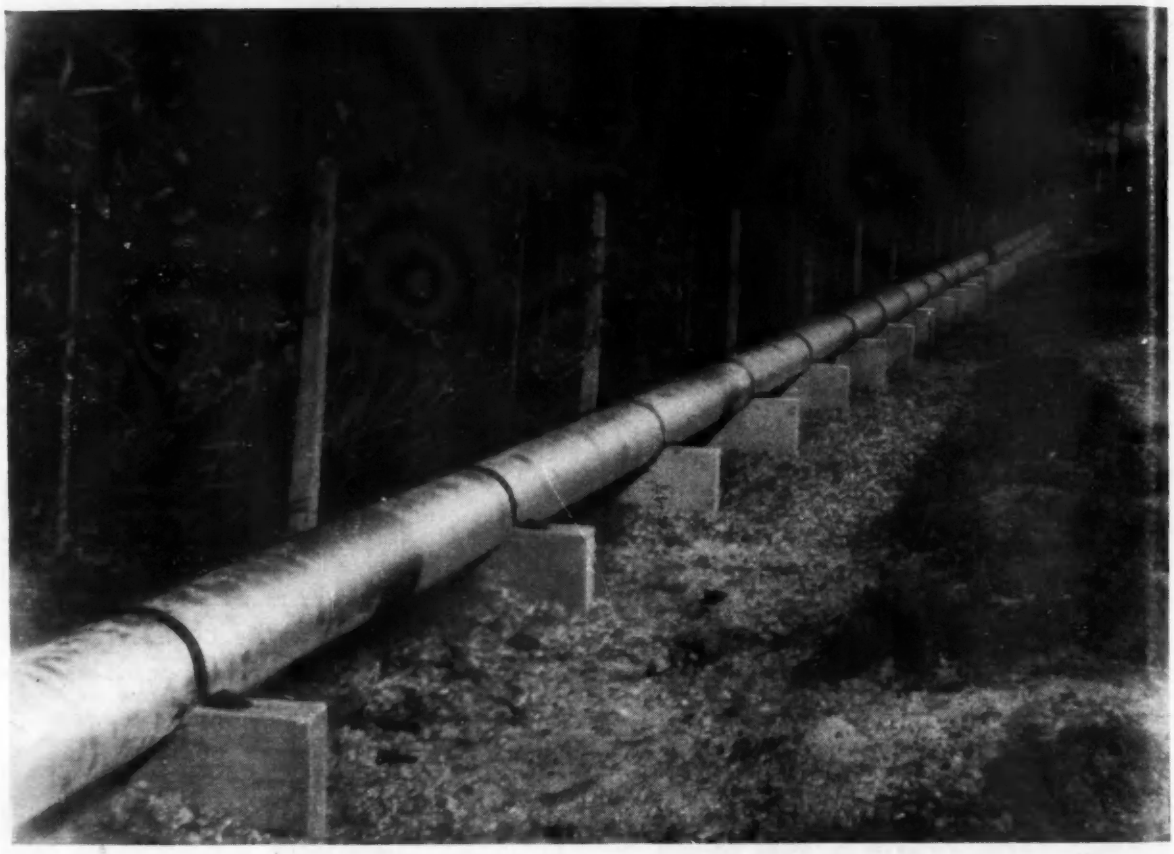

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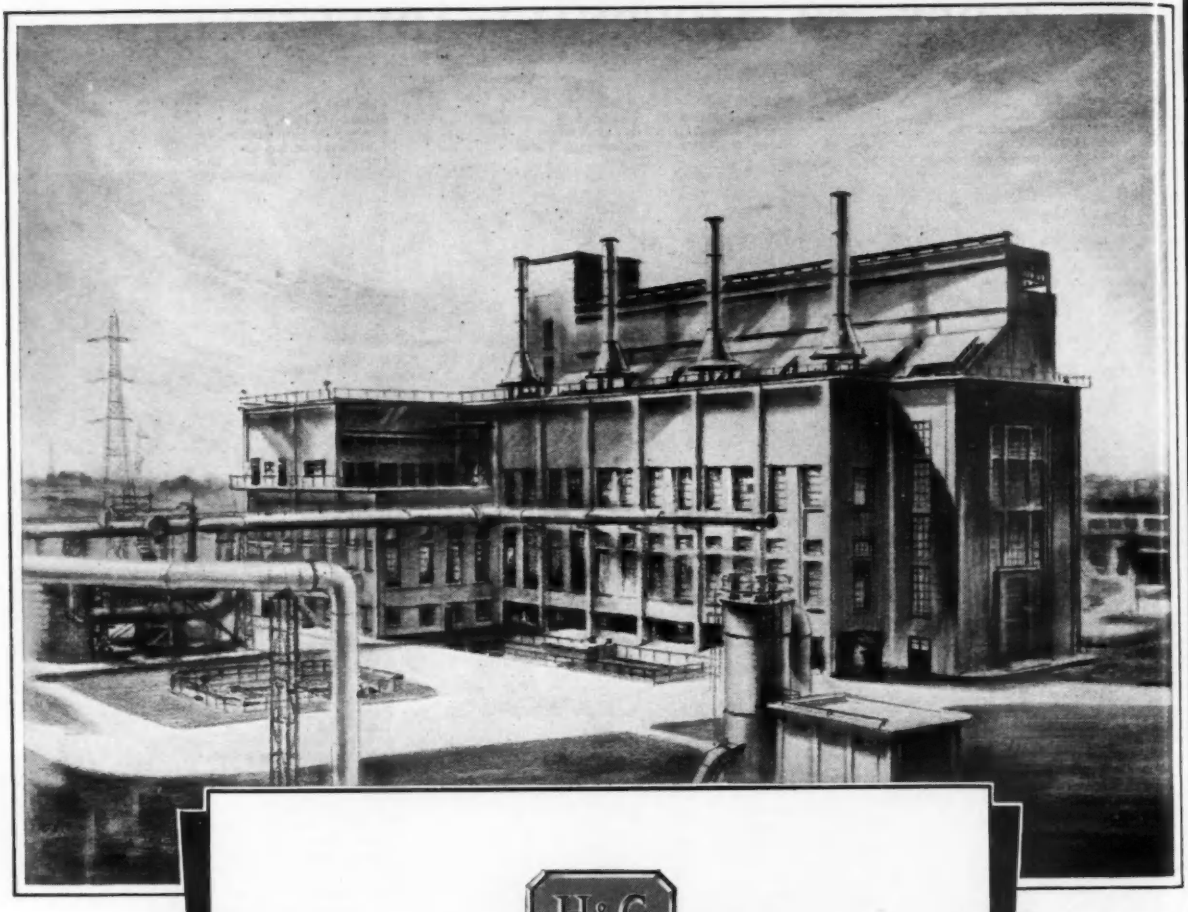

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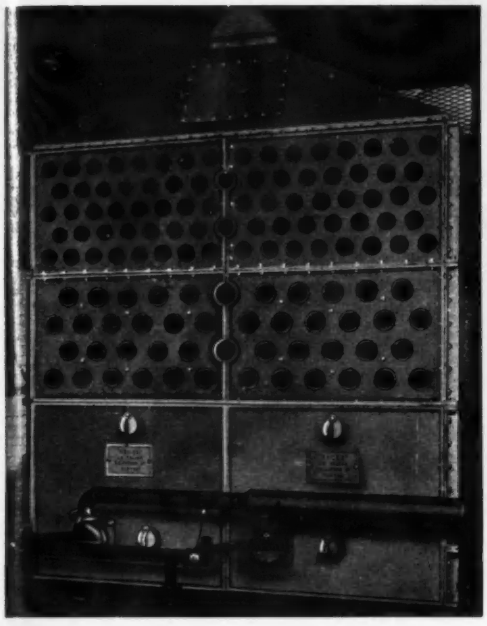

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GAS JOURNAL

VOL. 275. No. 4701 105TH YEAR July 8, 1953

FAREWELL TO FETTERS

THE news that the ban on promotional publicity by the gas and electricity industries has been lifted comes not a moment too soon. On the unnecessary extension of this ban can be placed some of the blame for the startling deterioration in appliance sales during the past year and the crippling, and in some cases virtual extinction, of manufacturing firms which should have been allowed to continue to serve the public by diverting a proportion of their profits to the search for greater efficiency.

The publicists in our industry can now wake from what one imagines to have been a sort of twilight sleep, fraught with those unhappy dreams that have to do with missing trains and being one healthy relative removed from a fortune. Perhaps that does them an injustice. It suggests that they have indulged in some kind of hibernation in which all outward signs of life cease. That that is not so, we are well aware, for throughout this troublous time our showroom windows have not been empty of displays or our newspapers and magazines of gas advertisements. They have struggled on within—but sometimes only just within—their terms of reference, gamely fighting a battle with one hand tied behind their backs. And since publicists are confirmed optimists, they have swapped rumours and hoped against hope that deliverance was at hand. And they have made plans. The Gas Council and, we are sure, the area boards, have held themselves ready, at the drop of a hat, to go over to the offensive—or, if we may use that expressive Americanism, 'get in there pitching.'

There is another aspect of this new-found freedom. The inability to indulge in promotional publicity, together with hire purchase restrictions and purchase tax, has been blamed for the post-war dearth of sales. Suggestions that the salesman himself has grown stale have always been received with a hurt expression and countered with the excuse that lack of business was due not to any human failing but to these hindrances imposed from above. Now it is becoming less easy to pass the buck to some obstructive deity or to the machinations of red tape. The time is coming when we can once again say, 'Mr. Salesman, it all depends on you.'

The next few months promise to be both exciting and encouraging. Already things are stirring, as our leader paragraph on the new sales drive in the South West suggests. But although there will unquestionably be much frantic activity in the publicity offices and in the other regions inhabited by that forceful and individual breed, sales in the gas industry cannot come from publicists alone. Publicity is no more than a valuable sales aid and our area boards would be well advised to look critically at their sales personnel. Have they the knowledge, the background, the experience? Probably they have. But do they really *want* to sell? Have they the right incentive, either monetary or moral?

WEST'S

IT is 80 years ago that John West began to introduce mechanical handling into the retort house and gasworks at Maidstone where he was then Engineer and Manager, and 70 years ago that West's Gas Improvement Company, Ltd., founded 10 years earlier in Maidstone, moved to its present headquarters in Manchester. From small beginnings the Company has expanded into a world-wide organisation with major establishments in London and Sydney and effective representation wherever town gas is in use. Over a very large fraction of that time Sir Frederick West has been associated with the Company, of which he has been Chairman for over 30 years. Under his guidance and direction the organisation has been built up into its present form. It is therefore with the very greatest interest that many gas engineers will turn to the series of articles which he is now writing for the Company's house journal *West's Gas*, describing in some detail the manner in which contracts are dealt with in preparation and production. No doubt the primary object of these articles is to stimulate the interest of the rank and file of the organisation in the job as a whole. Such an object would be characteristic of Sir Frederick's well-known views on the importance and value of the team spirit in production. These views are the result of a long and ripe experience of engineering and industry in general, and it is an encouraging sign of the essential health and vigour of British industry that they are so widely accepted.

But if co-operation is of immense value in production it is of no less value between the constructional engineer and the designer and operator of the plant, between the administration and manufacturing sides of the gas industry and the constructor of the plant to carry out the aims and policy of gas boards. In the first

article of this series, which appeared in the March issue of *West's Gas*, Sir Frederick lays all due stress on this aspect of the constructional side of gas engineering. It cannot be too clearly realised that most of the rapid progress in gas manufacture has been due to the close and cordial collaboration between these two sides of our great industry.

Indeed this first article is dominated by the evidence of collaboration with the prospective client in the preparation of the estimates and tender for the contract. Competition between rival constructional engineers is wholesome. It is all the more wholesome when it is directed not only to the submission of the lowest price but also to the closest correspondence between what can be offered in practice with the ideal before the minds in which arise the initial concept of the results to be realised. 'Negotiations may be opened between the purchasing authority and the contractor at a very early stage after the initial conception of a scheme.' And in more homely language, 'There is more than one way of doing most jobs and generally the first step in these negotiations is to prepare and submit to the client two or more alternative means of securing the desired result.' That this collaboration continues throughout the preparation of the tender and the execution of the contract is clearly brought out in these articles.

The second article, appearing in the June issue of *West's Gas*, shows the progress of the contract over the drawing board. Several points are of considerable interest. First, there is the extent of the work involved in the execution of a major contract for a modern installation of carbonising plant with all its ancillaries of coal and coke handling machinery, waste-heat recovery, sometimes power generation machinery, and always its equipment of mechanical, electrical, and physical controls. The details of the organisation itself will perhaps be of most interest to those engaged in them and to their confrères in kindred organisations. The gas engineer on the purchasing side will note the care with which his requirements are attended to.

Another point of interest, only briefly touched upon, will be the evidence of energetic measures taken to deal with the vast expansion of business at home and abroad. It was necessary to relieve the burden upon the Manchester drawing office. No doubt the present relative immobility of personnel contributed to the setting-up of the large drawing office in London, while exigencies of present-day conditions of world trade led to the expansion of the drawing office in Sydney where Australasian contracts are dealt with.

Finally, there is the question of recruitment of drawing office personnel, in which full advantage is taken of the rich educational facilities afforded by the Manchester Municipal College of Technology and the junior technical schools, and a close watch is kept on the progress of apprentices and juniors through these institutions.

These articles are not the first instance of competitors seeing the wisdom of publicity rather than secrecy in organisational method. There is something to be gained in learning from each other, apart from the confidence engendered in the potential market by the knowledge that requirements are met with expert attention. A certain measure of collaboration is possible and advantageous even among competitors. And placing the results of his ripe wisdom at the service of all is only another instance of Sir Frederick West's devotion to the industry in which he has, as his principal occupation, been so long engaged.

A SUCCESS STORY

THE Chairman's Address to the annual meeting of the Eastern Section of the Institution of Gas Engineers at Clacton last month was essentially a success story—a plain straightforward account of how attention to detail had led to the raising of efficiency and the lowering of production costs in an important provincial undertaking whose output has trebled in the past 15 years. Mr. F. A. Rhead became Engineer, Manager, and Secretary of the former Peterborough Gas Company at the beginning of 1946 in succession to Mr. Raymond Prince who after eight years at Peterborough had been appointed General Manager of the Brighton, Hove, and Worthing Gas Company and who, on vesting day, became Chief Engineer of the South Eastern Gas Board. With modesty characteristic of an able engineer who has had varied experience in several parts of the country—he had been second in command at Exeter before he went to Peterborough—Mr. Rhead gave his predecessor credit for the foresight he displayed in 1938 which led to the installation of the then latest Woodall-Duckham carbonising plant which came into full operation in 1944. He took over a well equipped works operated to a high degree of efficiency and producing gas into holder at a very cheap rate. Despite misgivings on the part of members of the board, output continued to increase, and a recommendation that an additional water gas plant should be installed had been accepted when nationalisation took place. The Eastern Gas Board, rising to the wider responsibilities imposed by nationalisation, not only appreciated the need for pressing on with the new plant but promptly ordered two Power-Gas units of 2 mill. cu.ft. per day each—one for Peterborough and one for Bedford—an arrangement which at once avoided duplication of spares, facilitated availability from both districts of spare trained operators and personnel, and, more important still, led to interchange of experience between the districts.

Attention to all the ancillary plant followed and regard was paid not merely to the successful running of the installation but to the prevention of nuisance to nearby neighbours. Great attention was paid to the economic production and utilisation of steam, and Mr. Rhead and his team have now succeeded in running the entire works at all times of the year with waste steam from the vertical retorts and water gas plants coupled with augmentation by producer gas when necessary. Careful utilisation of steam is regarded as one of the most important forms of economy, with consequent raising of works efficiency. Problems of standardisation and simplification on the works have been tackled with vigour. For example, a scheme is in hand for the concentration of general works service tar and liquor pumps into one point under cover to simplify an existing system which, like Topsy, has just 'growed up' over the years. Hundreds of feet of steam pipe will be replaced by approximately 40 ft. only.

On the utilisation side, too, Peterborough has progressed, largely because of the detailed attention given to the cost of carrying out given processes rather than

this mere question of price per therm. We like Mr. Rhead's closing remark that 'we have no intention of resting on our laurels and indeed have several other ideas which we are pursuing in the hope that after careful balance sheets for these are prepared we may feel that they are worth implementing.' There is, as Mr. Sydney Smith said during the Clacton meeting, a danger of forgetting that the people who served the old companies and municipal undertakings well are the same people who are running the industry today. So long as practising gas engineers like Mr. Rhead are in charge, the gas industry will continue to flourish in its service to the public.

SALES SPEED-UP IN SOUTH WEST

SLOWLY, AS THE BRAKES ARE RELEASED, the sales machinery of the industry gains momentum. It is a little rusty from disuse, but at least the wheels are revolving and generating some warmth in the hearts of our salesmen. It is good to see, for it marks the gradual return of those hard-selling days before the war when competition really meant something. Down in the South West, there is a strong determination to make sales top priority. With the blessing of the Board Chairman, Mr. C. H. Chester, the Salesmen's Circles have adopted an intensive and progressive course in salesmanship and things generally are warming up. The latest news—coincident with the lifting of the ban on promotional publicity—concerns the Board's decision to place certain gas water heater appliances on simple hire, from July 1, which has resulted in the promotion of the largest publicity campaign ever undertaken by the Board. The advertising features 'Hire a gas water heater—no deposit—and for a little over one penny a day,' and the campaign, which starts off with 'splash' announcements in the 11 dailies and 54 weeklies of the area, runs throughout the month; in several cases half pages have been booked.

In collaboration with the Board's Northern and Southern publicity departments the five manufacturers concerned—Radiation, Ascot, Parkinson, Main, and Ewart—are tying up with this scheme with support advertising in the dailies repeating the Board's theme and illustrating the appliances available. The entire scheme has been so devised that on every night of the week an advertisement will appear in the majority of the daily papers of the area throughout the month. Special window displays have been installed, 'For Hire' stickers supplied for labelling appliances and posters prepared. Nearly 50,000 special leaflets have also been prepared for distribution throughout the area, and all gas accounts will carry a special message overprinted in red. This, we suggest, is the sort of forthright approach to selling which is needed—and as yet there is little indication that electricity is prepared for such an onslaught on the market.

KENT COUNTY SHOW

THIS IS THE SEASON for agricultural shows, when the gas industry, in taking this opportunity of meeting the people, contributes much to the colour of the scene. It is the time when home service personnel really come into their own, for in our experience it is their demonstrations which are the mainstay of any gas pavilion. And it is the time (we hope) when they who clasp the purse-strings of the area boards recognise the fact that participation in a show of this nature is seldom justified by sales clinched on the showground, but that many of the impressions gained there will be reflected in sales at a later date. To test these views we travelled to Maidstone to take a look at the famous Kent County Show, held in lovely Mote Park on July 1 and 2. One glance at the bright façade and the range of well-displayed appliances convinced us that here before our eyes was the whole justification for gas in the agricultural arena. The South Eastern Gas Board invited visitors on to an attractive open stand with a *continuous* home laundry demonstration featuring the Morley gas and electric washing machine. And in this connection it is worth mentioning that a child from the audience was invited to turn the handle of the wringer—a small point, but it registered with the crowd. In addition to domestic gas and coke appliances, such agricultural equipment as pasteurisers, bone digesters, incubators, etc., were shown, together with a model grass dryer, muffle furnace and bakehouse. Attracting most interest in this section were live chicks in a thermostatically controlled hover type brooder devised by Mr. D. W. Cattlin, Kent County Divisional Industrial Representative, which replaced the usual electrical element by infra-red mantles based on those formerly employed in Sugg's clinical lamps. There were three mantles in the lamp, each burning 2½ cu. ft. per hour, but the idea can be extended in any way, notably for farrowing lamps for pig breeding. Mr. J. D. C. Woodall, Maidstone Group Manager, who incidentally is a Council Member of the Kent County Agricultural Society, is justifiably proud of his fine stand. And our own admiration grew immeasurably when we learned that instead of a team of designers and contractors, the whole affair is the work of Mr. R. C. Bergg, Maidstone Showroom Manager, a designer with some bright ideas at Croydon, and *one works carpenter.* It makes you think!

HINCKLEY LIQUOR AT STIVICHALL

IN THE 1952 REPORT of the Water Pollution Research Board there is a short section on the work at Stivichall, Coventry, dealing mainly with observations on the effect of spent gas liquor from Hinckley gasworks on sewage treatment. At Hinckley the gas is treated by electrostatic precipitation and the retort house liquor was separated from the spent liquor supplied to Stivichall for the experiments. The liquor was added at a controlled rate to one of the large filters. In 1951 the proportion of gas liquor to flow of sewage was 1.5% of the dry weather flow, and there no significant effect was observed on the quality of the filter effluent. In July this proportion was increased to 3% with still no deleterious effect. 'It is clear . . . . that the effect on sewage treatment of the liquor from the Hinckley works is much less than that of spent liquor from a gasworks at which the gases are not treated by electrostatic precipitation,' bearing in mind that so far the retort house liquor is not included. It is now proposed to carry out experiments in which spent liquor from Hinckley *together with the appropriate proportion of retort-house liquor* will be treated in admixture with sewage.

Preparations are also being made for a continuation of the work on fractions of gas liquor at Stivichall. At the end of the first experiment in August, 1951, extensive alterations were made to the small experimental percolating filters; their number was increased from eight to 14, an improved type of dosing valve for adding the fractions to the sewage was installed, and apparatus for the automatic sampling of influent and effluents was fitted. In preparation for the next experiment the 14 filters have been matured by treating sewage only at a rate which was increased from 100 to 150 gal. per day per cubic yard of medium. Effluents of gas quality are now being obtained from all the filters and the work on assessing the importance of the various fractions of gas liquor can be resumed.

Personal

WEST MIDLANDS CHANGES

We are informed of the following personnel changes in the West Midlands Gas Board:—

Mr. W. L. JACKSON is appointed Engineer to the Walsall and District Division. His previous post was with the Newcastle Division of the Northern Gas Board.

Mr. T. A. E. PURSLOW, hitherto District Superintendent, Shrewsbury, becomes Divisional Sales and Service Officer to the Shropshire Division.

Mr. A. G. ADDISON, hitherto Smethwick Group Superintendent, is appointed Distributing Engineer to the Shropshire Division.

Mr. F. HARVEY is appointed Deputy Divisional Manager, Walsall. He has been, since 1951, Group Manager at Grimsby.

Mr. J. H. W. REDDALL is appointed Deputy Coal and Transport Officer to the Board, in succession to Mr. F. A. Riley, who retired in May after nearly 50 years' work for the Birmingham undertaking.

W. H. REED

Mr. W. H. REED, Engineer and Manager at Warwick for the past 32 years, retired last week. He began his career with Messrs. Peckett and Sons, Locomotive Engineers, Bristol, in 1907, and entered the gas industry in 1911 as a pupil of the late Mr. Thomas Berridge, at that time Engineer and Manager to the Leamington Priors Gas Company. When Mr. Reed was appointed to the Warwick undertaking, the annual sales of gas were 91 mill., since when it has steadily increased to a figure of 280 mill.

F. CAUDWELL

Mr. FRANK CAUDWELL, Distributing Engineer, Shropshire Division, will retire at the end of this month, and bring to an end 50 years of service to the industry. After holding appointments at Ipswich with the Gas Light and Coke Company, and at Exeter, he moved to Shrewsbury in 1920 as Distribution Superintendent. He served on the Council of the Midland Junior Gas Association for many years and was elected President for 1928-29. He was also Chairman of the Midland Gas Salesmen's Circle in 1930-31, and has contributed many valuable papers to these organisations. Since moving to Shrewsbury he has seen the undertaking more than double its output, which necessitated much reorganisation of the distribution system. Keenly interested in education, he instigated instruction classes for fitters and apprentices at the local technical college, and many of his former students now hold responsible positions in the industry.

C. M. D. BELTON

With the retirement of Mr. BELTON, which we foreshadowed on May 27 and which became effective last week, we lose a link with one of the oldest gas families in the country, for grandfather, father, uncle, brother and nephew are also identified with the industry. Mr. C. M. D.'s service has extended to 50 years, of which 44 were spent with the old company or the nationalised division.

On leaving King's School, Chester, Mr. Belton became a pupil engineer with West's Gas Improvement Co., Ltd., and in their employ was associated with the original St. Helen's project and also with installations in Milan. In 1909 he became assistant to his uncle, William Belton, who was Engineer, Secretary, and Manager of the Shrewsbury Gas Light Company, and eventually succeeded him in 1919. Under his control the undertaking prospered, the output rising from 235 mill. in 1918-19 to 640 mill. in 1948-49. On nationalisation, he was appointed General Manager of the Shropshire Division.

During his long career Mr. Belton has served on many Midland and national committees, dealing with such diverse matters as tar marketing, coke grate design and industrial relations. For many years a member of the former Midland Association of Gas Engineers and Managers, he was President in 1929-30.

Successful in obtaining his own professional qualifications early in his career, Mr. Belton gave every encouragement and assistance to young people who came under his control and who had similar ambitions. His reward came from their successes, for under the Gas Education Scheme six engineers trained at Shrewsbury obtained Diplomas, and five the Higher Grade Certificate.

Mr. GEORGE CALDER, C.B., has been appointed by the Minister of Fuel and Power a part-time Member of the Eastern Gas Board, on which there has been a vacancy. Mr. Calder was in 1919 an Assistant Principal to the Air Ministry and subsequently held various parliamentary under-secretaryships. Having served the Ministry of Aircraft Production during the war, he was transferred to the Board of Trade and became Second Secretary in 1949. He is now United Kingdom representative on the British Phosphate Commission.

Mr. J. R. W. ALEXANDER, C.B.E., has been re-elected as President of the Institute of Arbitrators. At Tallow Chandlers' Hall he received an illuminated address from the Council of the Chartered Institute of Secretaries to mark the successful completion of his year of office as President. The heraldic devices emblazoned on the engrossment embodied the armorial bearings of the Institution of Gas Engineers, of which he was Secretary for some years.

Mr. JOHN L. ANSTEY, Sales Manager of the Parkinson Stove Co., Ltd., has just been elected President of the Warwickshire Rugby Football Union for a third time. He is also serving for the third time as President of the Warwickshire Society of Referees and for the fifth consecutive year as President of the Kenilworth Rugby Football Club. Mr. Anstey's Warwickshire Rugby re-election was proposed by Mr. W. D. Wilson, Chairman and Managing Director of Wilson Gas Meters, who is a Vice-President of the Union.

Mr. J. E. BRANDON, Service Superintendent, Sheffield, has been appointed District Manager, No. 1 District, Sheffield and Rotherham Division, as from July 1. Mr. Brandon, who is 35, began his career with the Great Yarmouth Gas Company in 1934. In the Distribution Department, he received his early training, on the completion of which five years later he left to become District Representative with the Rugby Gas Company. He was soon promoted to District Inspector, a post he held until the war intervened. Serving from 1939 until 1946 in the R.A.O.C. and R.E.M.E., he had held the rank of Captain for some time when he returned to Rugby as a Senior District Inspector. In 1949 Mr. Brandon was appointed Chief Inspector in the Sales and Fittings Department of the Sheffield and District Gas Company, where in 1950 he became Service Superintendent.

Mr. J. E. N. DAVIS has relinquished the post of Staff and Joint Secretary of the National and Local Government Officers' Association. He will, however, remain a member of the Council. At the annual meetings of the Staff Side and the National Joint Council for Gas Staffs, tributes were paid to his services to both bodies.

Mr. E. GRAFTON, Manager of the Pump Department of National Benzole Company, Ltd., since 1926, retired on June 30. On the occasion of his retirement, Mr. H. H. Bates, Managing Director of the Company, presented him with a cheque and album containing the signatures of all those who had subscribed to it. Mr. Grafton was the designer and originator of the 'Trisphere.' His post-retirement occupation is liaison officer for the company in Scotland.

Mr. S. H. WOOD has been appointed Manager of the Pump Department of the National Benzole Company, Ltd., in succession to Mr. E. Grafton. Mr. Wood joined the Company in 1921 as a Sales Representative in North London and, two years later, was promoted to Divisional Manager, Plymouth. In 1926 he became Divisional Manager of London Division, and during the war was Assistant Manager of the Metropolitan Region of the Petroleum Board. In 1949 he was appointed Group Sales Manager.

Diary

July 1.—SOUTH WESTERN SECTION, I.G.E.: Summer Meeting and Ladies' Day. Torquay.

July 3.—MANCHESTER AND DISTRICT SECTION, I.G.E.: Chairman's Day. Preston.

July 7.—SOUTH EASTERN G.C.C., Katharine Street, Croydon, 2.15 p.m.

July 7.—EAST MIDLANDS G.C.C.: Victoria Station Hotel, Nottingham, 11.30 a.m.

July 7-10.—ROYAL SHOW, Blackpool. Gas Council exhibit.

July 30.—NORTH THAMES G.C.C.: Westminster City Hall, Charing Cross Road, W.C.2, 2.30 p.m.

August 17.—WEST MIDLANDS G.C.C., Queens Hotel, Birmingham, 2.30

GAS BOARD'S MOBILE CONSULTING ROOM

TWENTY-ONE doctors from 14 countries who are studying modern occupational health methods at Manchester University visited the Bradford Road works of the North Western Gas Board's Manchester undertaking on June 16 to see the Board's new 'surgery on wheels' which has been specially designed to help safeguard the health at work of some 20,000 gas employees in the North Western region.

Under the leadership of Professor R. E. Lane, Professor of Industrial Medicine at the University, the doctors were shown some of the novel features of the mobile unit which has been designed for the Board to the specification of its Chief Medical Officer, Dr. G. O. Hughes, M.C., and the Transport Officer, Lieut.-Col. W. H. Slack.

The unit, which will be used mainly in the industrial belt of Manchester and in Cheshire, comprises a fully equipped doctor's consulting room and two dressing rooms, heat-insulated and mounted on an Austin chassis. Under the floor, a storage tank provides water which is conveyed by a rotary pump to a stainless steel sink at the touch of a switch.

Boiling water is on tap from an instantaneous gas water heater. Lighting inside the unit is by fluorescent tubes, the current for which can be derived from either battery or mains supply. The consulting room is heated by tubular radiators fed with hot water from the engine and supplemented by a gas convector unit. Economy and adaptability are the guiding factors in the unit's design. In Liverpool and Manchester there is a sufficient number of employees to justify the Board's establishing permanent medical centres in these cities, but the cost of equipping similar centres to serve the rest of the area (which covers some 4,000 sq. miles) would be prohibitive, and it was decided therefore to build up the mobile unit for this purpose.

In planning the unit, the board has kept in mind the possibility of adapting it speedily in time of emergency as a mobile surgery for civil defence purposes. To this end, the consulting room can readily be converted into an operating theatre. The unit, which is already in use, represents the latest measure taken by the Board in setting up its occupational health service introduced in 1952. Part of this service involves the medical assessment of employees on entering the gas industry and at intervals during their employment.

The party of doctors under Professor R. E. Lane (looking at camera, second from right) is shown over the mobile unit by Dr. G. O. Hughes, M.C., who is standing on the step of the vehicle. On the right is an interior view of the consulting room.

Labour and Management

MANAGEMENT of labour in its present complicated form is not so much the product of a more general acceptance of the humanities and the elaboration and specialisation of industrial work as the changed role of the worker in the community. In days gone by the constant threat of unemployment alone was sufficient to keep labour management on a simple, direct basis. The change, and to some extent, the reversal, of the social relationship between management and labour has given the latter a new power, the ability to command attention, understanding, and consideration.

The study of the behaviour of labour under an endless variety of conditions has given birth to a new group of satellite subjects, such as labour psychology, many of them new in character and the result of an entirely fresh approach to a field of activity taken very much for granted. The heavy concentration of labour in factories and in industry generally has created a new profession, the personnel manager. Workers' needs and opinions are now studied with an intensity born of the knowledge that failure to grasp complaints like weeds and uproot them before they can seed themselves, will result in a deterioration in relations between labour and management and a consequent fall in output.

Industrial relations in its very facets has been the subject of a great many books in recent years, with a varying degree of insight into the fundamentals. We have been studying a new addition to this already formidable library, a work modestly entitled *Supervisory Management Notebook*, and published by Newman Neame, Ltd., 50, Fitzroy Street, London, W.1. The book is unusual in that it is the first text-book which offers active participation by the student and which offers him the opportunity to continue his training both on the job and during his spare time. Loose-leaf blank sheets are provided for general notes and supplement the note-making space on each page. A concluding section of case studies provides practice in the application of knowledge and experience to actual problems. Further case histories may be obtained every fortnight for a year. Production of the book is excellent, although it is not improved by the inclusion of those highly stylised and involved diagrams purporting to show the relationship of a great many factors to each other, which are so much a part of contemporary semi-technical literature.

The notebook, which has been written by a panel of six experts on the subject, may be said to have grown out of the residential courses in executive and supervisory management at Burton Manor, which have been attended by some 2,000 men and women during the past four years.

In that this is an aid for use in conjunction with organised courses, private reading or directed individual development, and deals with some of the major issues and problems which the supervisor has to face, we believe it is a useful volume. If we have a criticism it is that while in no way wishing to extend unnecessarily a work which relies upon its concise nature, we feel insufficient reference is made to the more historical aspect of social and economic background. To our mind it is fruitless to attempt to understand and tackle problems of management unless a clear appreciation of the historic background is entertained, and there is no guarantee that readers will be forearmed with the necessary knowledge. This apart, the *Supervisory Management Notebook* should meet a definite need and should provide a steady and well calculated framework for further study.

Berwick now assured of quantity and quality

Civic ceremony opens new plant

THE new Intermittent Vertical plant built by Gas Chambers & Coke Ovens, Ltd., at the Berwick-upon-Tweed unit of the Northern Gas Board was officially inaugurated by the Mayor of Berwick, Alderman G. M. Lamb, J.P., on June 16. The ceremony was witnessed by various representatives of the town, members of the Northern Gas Consultative Council, and the Chairman and Deputy Chairman and officials of the Northern Gas Board.

Introducing the Mayor, Mr. W. SUTCLIFFE, General Manager, Blyth Division, said he was pleased to see they had a good cross-section of their consumers present, because they were the people who would benefit most from the new plant. 'We also have representatives of the contractors who built it, representatives of the workmen who are going to run it, and representatives of the Gas Board who are paying for it,' said Mr. Sutcliffe.

Alderman LAMB, in his opening remarks, said that the Northern Gas Board was a shining example of what nationalisation could mean. They had taken over a great deal of plant, which, to say the least of it, was not up-to-date, and they had made every effort to bring it up to a good standard in order to give satisfaction to all who used gas. In the past there had been many complaints about the quality and quantity of gas in Berwick, and he was pleased to say that recently these complaints had ceased. This was due to the efforts of the Board who had done everything they could to bring a sufficient quantity of gas into production to satisfy not only the people who used gas but also those who in the past were unable to obtain supplies. Alderman Lamb complimented the Board on being a very go-ahead concern, and said he had always found the officials most helpful and considerate.

By pressing a button on the specially erected platform, the Mayor set to work the skip hoist, and said he hoped the new plant would continue to serve the public for many years to come. Following the ceremony the guests made a tour of inspection of the new plant.

At a luncheon which followed in the Kings Arms Hotel, Mr. J. R. BRADSHAW, Deputy Chairman, Northern Gas Board, proposed the toast to 'The Loyal and Ancient County of the Borough and Town of Berwick-upon-Tweed.' He said that the Board had felt that here they could do a service for the community. In the new set-up at the gasworks they had two people in Mr. Sutcliffe, Divisional General Manager, and Mr. Pawley, Unit Manager, in whom the Board had every trust and confidence. Mr. Bradshaw spoke of Berwick's development from a little fishing port to an agricultural centre, and said the town was steeped in antiquity and the people had every right to be proud of their heritage. On behalf of the Board, he presented to the Mayor an inscribed silver salver as a memento of the occasion.

Replying, the MAYOR thanked Mr. Bradshaw for the kind things he had said and for the very handsome souvenir. He also thanked the Board for the fact that they had not forgotten Berwick but had constantly endeavoured to give them something better than they had had in the past. The town was now very much better served as regards the gas supply than it had ever been before, he added.

Proposing the toast, 'The Northern Gas Board,' Councillor MACKAY, Chairman of Berwick Harbour Commission, said the capital expenditure which had been laid out in the Board's area was astonishing. Although they were often criticised, the Board had no easy task, and, in spite of the high cost of coal and transport, a good job had been done. Now they looked forward to improved service, cleaner gas, and plenty of it. They wanted it, too, at a reasonable price.

Replying, Mr. E. CROWTHER, C.B.E., Chairman of the Northern Gas Board, said that while there was still a slight dispute as to whether Berwick-upon-Tweed was in England or Scotland, they did know that the town was in the area of the Northern Gas Board. The Board had always been conscious of its responsibilities towards Berwick, and when it took over it found a great deal of work had to be done. Some £100,000 had been spent on the undertaking since vesting day. It was hoped that the same amount of gas as previously would be produced but with 1,000 tons less coal per year. The new plant could accept a 33⅓% greater load than the present demand for gas in Berwick, and he hoped that the demand would increase and that in a relatively short time the Board's losses would cease and that they would be able to run along on an even keel. The Board would try to deserve the esteem of the gas consumers, and they looked to the future with confidence. The new plant was not by any means the end of their development, said Mr. Crowther. A new coke plant was still to be erected which would give better quality coke.

The toast of 'The Contractors' was proposed by Mr. J. F. JACKSON, Secretary, Northern Gas Board, who paid tribute to the co-operation which existed between the firms who were responsible for the project. The contractors for the carbonising plant were Gas Chambers & Coke Ovens, Ltd. Foundation work was carried out by the Demolition & Construction Co., Ltd. The brick chimney was built by Custodis, Ltd., and the band conveyor and skip hoist were supplied by the New Conveyor Co. The order for the plant was placed in May, 1951, and gas-making commenced on March 11, 1953.

Mr. A. E. MORRIS, Technical Director, Gas Chambers & Coke Ovens, Ltd., replying, acknowledged the great and willing co-operation they had received from the Northern Gas Board throughout the whole of the work and he hoped that the plant would have a long and useful life.

SOME PERSONALITIES AT THE CEREMONY:
Mr. J. R. Bradshaw, Deputy Chairman, Northern Gas Board; Alderman G. M. Lamb, Mayor of Berwick; Mr. W. Sutcliffe, General Manager, Blyth Division; Mr. E. Crowther, C.B.E., Chairman, Northern Gas Board; Mr. David Storar, Sheriff; Councillor E. D. Mackay, Chairman, Berwick Harbour Commission.

Details of the Berwick-upon-Tweed plant

The new plant consists of nine intermittent vertical chamber ovens enclosed in a steel-framed building encased with a panelled blue-brick base with univertical asbestos sheeting above.

The nine chambers are arranged in three beds which form the retort bench, and each chamber is 15 ft. 2¼ in. high and of approximately rectangular section, 8 ft. 2¼ in. × 8¼ in. at the top, and 8 ft. 2¼ in. × 1 ft. 0½ in. at the base.

The chambers are heated to approximately 1,300°C. by the combustion of producer gas made in three producers built integrally with the chambers, the air for combustion being preheated in a recuperator by the products of combustion on their way to the main chimney. The retort bench is built of silica and firebricks and is supported on a suitably braced steel structure.

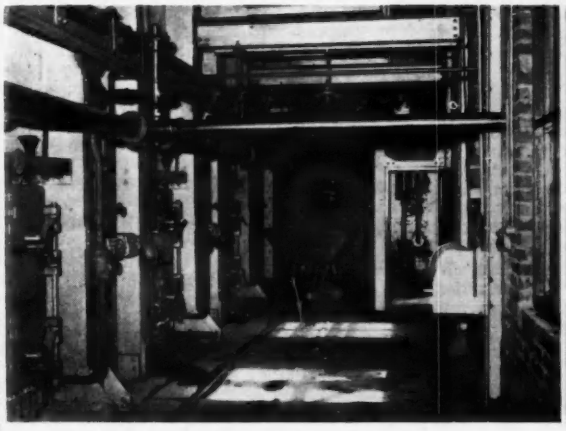
Each chamber will hold 2.3 tons of coal, and, depending on the temperature in the chamber, will carbonise this coal in 12 to 14 hours producing coal gas at a calorific value of 540 B.Th.U. This is reduced by steaming to 475 B.Th.U. In addition, the rich coal gas can be diluted with some of the producer gas used to heat the chambers. The volume of gas made at 475 B.Th.U. can, of course, be adjusted to the needs of consumers by suitable combinations of the carbonising time, steaming time, and volume of producer gas added.

At present, the cooled coke is transported by lorry to a portable cutting and screening plant and is available for sale in the following sizes: (a) 2 in. and over, (b) ¼ in. to 2 in., (c) under ¼ in. Plans are being prepared for the complete mechanisation of the coke handling and grading operations.

The coal gas produced passes from the chambers to a Bryan Donkin retort house governor, to the condensers and exhausters, and then through the purification plant to the gasholders. Special attention has been paid to working conditions on the plant. Good ventilation is ensured by the use of open mesh flooring and a high standard of natural and artificial lighting is provided. A small mess room is provided for the plant operators.

Full use is made of electricity for power purposes, but where continuous operation is essential, stand-by steam drives are available.

The plant will produce 500,000 cu.ft. of gas a day and arrangements have been made for easy extension should this be found necessary.



Coal conveyor by New Conveyor Co., Ltd.

Producers and liquor pump house.

Fuel Saving Loan Scheme Improved

The Chancellor of the Exchequer, in the June 16 Finance Bill debate, referred to changes intended by the Government in the scheme introduced a year ago to encourage fuel saving on industrial premises.

An explanatory leaflet since issued by the Ministry of Fuel and Power, states that the scheme is open to industrial firms who wish to instal approved fuel saving equipment or to insulate their factories in order to save substantial quantities of fuel. Loans to individual firms will not normally exceed £30,000 and, subject to this limit, the amount of the loan offered may, in suitable cases, cover the whole cost of the proposed installation, including essential ancillary work. Loans will be made available only for work which can be completed in a reasonable time. Repayment of the loan may be spread over the period during which the equipment is being written off for taxation purposes, but subject to a maximum period of twenty years. Interest will be charged at commercial rates, except that loans will be interest free for the period ending two years after the equipment has been installed as determined by the Minister.

Consideration will be given to the granting of loans for any approved fuel saving schemes which through the incorporation of additional items of equipment with existing plant, or by structural insulation of existing factory buildings, would save substantial quantities of fuel.

If a loan is granted under this scheme it will still be necessary for the firm concerned to obtain any necessary licences, etc., which may be required before the work can be carried out. [The Chancellor, however, stated in the House that licences would be easily obtained.] An applicant should complete the Form L.F.S.2, which is obtainable from the Ministry of Fuel and Power, Fuel Efficiency Branch, Thames House South, Millbank, S.W.1. A brief specification and general arrangement drawing of the proposed installation should be provided with the application, which should be countersigned by a consulting engineer or engineering contractor and forwarded to the Regional Fuel Engineer of the Ministry of Fuel and Power for the region in which the firm is located.

Advice on fuel saving installations may be obtained at any time from the Regional Fuel Engineer, who will try to give all the help required. He will not, however, be in a position to inform firms whether or not loans will be granted on application in respect of any particular installation.

Negotiations for a loan in respect of work qualifying under the scheme will be undertaken on behalf of the Minister of Fuel and Power by the Industrial and Commercial Finance Corporation, Ltd.

Extensions at Armadale

THE MANY IMPROVEMENTS and extensions which have taken place at Armadale gasworks in the last few years were inspected by members of the Edinburgh and South-East District Committee of the Scottish Gas Consultative Council recently.

Since 1935 the output has increased from 35 mill. cu. ft. to 342 mill. Seventeen years ago the number of consumers was 4,228: at the end of last year there were 14,855.

It was explained that expansion still continues, gas deliveries into the Armadale district, excluding bulk supplies to other undertakings, having increased by 10% during the past financial year. This increase is mainly due to heavier demands by local industry—notably for the heat treatment of steel castings, the additional quantities consumed by large bakeries, and the expansion of domestic consumption as a result of many new housing schemes.

Midland Section I.G.E.

Summer Meeting in Wolverhampton

MEMBERS of the Midland Section of the Institution of Gas Engineers together with their ladies, comprising a total company of about 250 persons, attended the summer meeting held at Wolverhampton on June 26. They assembled at the gas showrooms in Darlington Street in the morning, and then the men proceeded to the Stafford Road gasworks while the ladies inspected the home service department and showrooms.

Luncheon was provided at the Wulfrun Hall at the invitation of the West Midlands Gas Board. The Chairman of the Midland Section, Mr. W. Macnaughton, presided, and the company included the Mayor of Wolverhampton (Ald. Mrs. A. A. Braybrook), Mr. K. M. Stock (Ministry of Fuel and Power), Prof. F. H. Garner, O.B.E., (Birmingham University and West Midlands Gas Board), Ald. G. E. Hodgkinson, O.B.E. (W.M.G.B.), Mr. J. T. Haynes (President of the Institution of Gas Engineers), Mr. A. F. Oatley (Chairman and Managing Director, Cannon Holdings, Ltd.), Mr. W. M. B. Furniss (Assistant Managing Director, Electric Construction Co., Ltd.), and Mr. H. I. Ginaven (Works Director, Goodyear Tyre & Rubber Co., Ltd.).

Encouragement from Area Boards

Mr. C. C. Wood (Senior Vice-Chairman, Midland Section, I.G.E.) proposed the toast of the West Midlands Gas Board and expressed thanks on behalf of those present for their very generous hospitality. Mr. Diamond and Mr. Lee were on holiday, but they were represented by Prof. F. H. Garner, a part-time Member of the Board. He would like to take the opportunity of assuring him that the members much appreciated the interest his Board took in the Section and the practical support they always received.

As successors of the old Midland Association of Gas Engineers and Managers, all present would agree that those very pleasant and instructive gatherings had not lost any of their happy character since vesting date. This was entirely due to the assistance and encouragement given to the Section by the various Area Boards interested in its activities.

Of course, there was nothing like a visit of an Association to get a works really clean and shipshape (laughter), so the gain was not all on one side; but he would like to congratulate Mr. Macnaughton on the splendid condition of his works. The creation of Area Boards had caused one difficulty. It used to be possible to propose the health of the undertaking concerned, together with personal knowledge of the Engineer and Manager; and the remark that he had not done an honest day's work in his life was not out of place. That approach would not do today for obvious reasons, but fortunately it was not difficult to find complimentary things to say about the West Midlands Board. They were fortunate in inheriting the splendid tradition of research initiated by the Birmingham Corporation Gas Department, and it was pleasing to know that their Central and Research Laboratories had been designated as a Gas Research Station and would continue that tradition. They also inherited an area which included undertakings that pioneered the development of industrial gas loads—he was thinking particularly of Birmingham and Stoke-on-Trent—and they had continued to meet these growing requirements which were so essential to the country's economy. Indeed, they had only been limited by the non-availability of steel for additional plant construction.

Example of Medical Service

He thought also that the Board was setting an excellent—possibly an idealistic—example in the standards of medical services which was being provided for the employees—a subject which was much to the fore in industry today. He supposed everyone would agree that an employer in a sizeable industry today owed a duty to employees to study and obviate occupational health risks, if in fact such risks existed. The West Midlands arrangements, using Medical Officers, works surgeries and divisional nurses would provide a first-class works health service which he was sure would be appreciated by the employees and which might well pay handsome dividends to the Board.

He coupled with the toast the name of Prof. Garner who was a great authority on oil technology.

Prof. GARNER in responding said the Midlands Section must hold a very honoured rank in the Institution because of the fact that the first gas lighting took place in that area—in Birmingham early in the 19th century. The essential elements of any industry today were high efficiency in manufacture and in utilisation and in the corresponding organisation. This involved the appreciation of research and development, which the gas industry possessed, together with that element of tradition which conferred stability. A great deal was being said with regard to competition between the various forms of fuel—coal, gas, electricity, petroleum—and he supposed later on that atomic energy would come along as well; but he thought, provided the basis was fair, there were great advantages in having this competition. It was, in fact, essential to present a spur to achievement in greater efficiency and to the lowering of operative costs without which few industries and very few individuals could be kept in the alert state of mind necessary for the accomplishment of best work.

Link with the Institution

Proposing the toast of The Midland Section, Mr. J. T. HAYNES, President of the Institution, remarked that one of the pleasures of being President was that of being able to express the thanks of the Institution to the Sections for their co-operation and support, which gave to the Institution that strength which was so necessary during the present transitional stage between private enterprise and nationalisation. Mr. Haynes then referred to the very close associations of the Midland Section with the Institution. No fewer than five of the Section's distinguished members—Messrs. Henry Jones, K. L. Pearce, Alex. Tran, J. E. Wakeford and W. Macnaughton—were now on the Council of the Institution; and within recent years they had provided two Institution Presidents—Mr. George Pearson and Dr. Harold Hartley.

The Section had other qualifications, but there were two main things to which he would like to refer—one was the interest which it had always shown in the Midland Junior Association. They had members of that Association on their Council, and themselves had representatives on the Junior Association Council. For a number of years the Section had given a prize for the best paper read at Junior Association meetings; but he would ask, were they going to stop at that sort of abstract recognition? There were many of them present who could remember from their younger days the thrill which they experienced by a shake of the hand and being greeted by name by some of the stalwarts of old days, and he would press the point that when the opportunity occurred they should attend Junior meetings.

The other matter on which they might be reasonably proud was that of their support to the Institution Benevolent Fund. Their Section had a very fine record in the help given for those who had fallen by the wayside. In thanking them for this, Mr. Haynes suggested with some hesitation the advantages of contributing under covenant.

The Road to Progress

Mr. Haynes coupled with the toast the name of the Section Chairman, Mr. W. Macnaughton, who had progressed to his present status the hard way, as most of them had done—as an apprentice, junior assistant, then senior assistant, deputy engineer and so on. He was President of the Junior Association some 22 years ago; and they owed him respect and, should he say, the kudos gained, for the way in which he had overcome through the years various difficulties and reached his present high position. (Hear, hear.)

Responding, Mr. W. MACNAUGHTON thanked the President of the Institution. The Midland Section was, he said, a flourishing part of the Institution, and that its members were enthusiastic was shown by the manner in which they had come from far and near to be present. There was a good spirit of comradeship among them, they were very willing to co-operate with each other, and they gave pride of place to no one in their efforts to achieve success in their work, and to make the gas industry an efficient part of the life of the nation. (Hear, hear.)

He concluded with a tribute to the Section Secretary (Mr. John Corrigan) and to members of his own staff for making the meeting a success and with a personal welcome to the guests.

After lunch the party split up; one section visiting the Goodyear Tyre & Rubber Co., Ltd., at Bushbury, and another proceeding to the nurseries of Messrs. Baker, of Codsall, at Boningale.

GAS in the lead sheathing of electricity cables

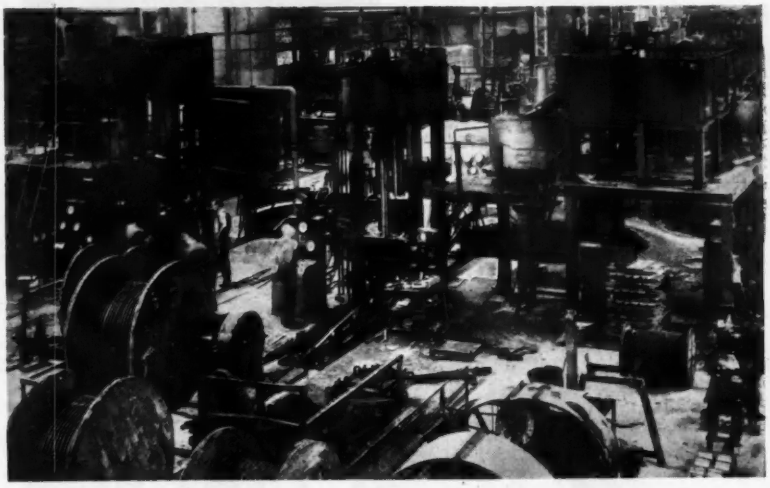
A SERIES of tests has been recently carried out at the works of Metropolitan Electric Cables, Ltd., Chadwell Heath, Essex, for the purpose of investigating the performance of lead melting pots now being fired by Hypact burners. The plant consists of three main sections: (1) The lead pots; (2) the extrusion press; (3) the winch or take-up gear for winding the sheathed cable on to drums.

There are two lead pots, one with a capacity of five tons and the other of two and a half tons, the larger being elevated to such a height that metal from it may be poured into the smaller pot. The metal in the form of ingots weighing from 50-60 lb. each, is loaded into the large pot for melting and dross removal and then poured into the smaller pot and maintained at a temperature of 375°C. until it is required for charging the extrusion press shown in Fig. 2. Both pots are maintained at full capacity. Each pot is supplied with gas through a 1½ in. B.S.P. supply via a main cock and a Satchwell thermostatic and electrically operated control valve to a Hypact burner situated in the combustion chamber. There is an independent ¾ in. B.S.P. pilot supply to each pot.

The channel through which lead is fed from the larger to the smaller pot is heated by means of a drilled bar burner, also fed from an independent supply. The lead is charged into the press from the smaller pot by a portable trough which is removed after the press has been charged; this trough is not heated.

After a day's working both lead pots are charged to full capacity and maintained at the working temperature of 375°C. throughout the night. Experience has shown that if the pots are allowed to cool overnight the contracting lead tends to creep past the valves, eventually cooling and solidifying, thereby completely stopping up the valve. When this occurs the lead has to be melted out of the valves with hand torches, thus wasting time and holding up production.

The small pot has an interlocking pilot cock in addition to the independent ¾ in. pilot supply. The gas consumed by these pilot supplies and the burner heating the valves and connecting pipe, together with the gas consumed to maintain the press at temperature, have not been included in the test figures as those supplied were unmetered, but it should be borne in mind that the heat so supplied has contributed to the process, and, in the case of the pilots under the pots, it is understood from the operators that these are almost sufficient to maintain the temperatures at equilibrium.



General view of the shops of Metropolitan Electric Cables with the lead coating process in the foreground.

The actual press containing the die is maintained at a temperature of 200°C. by a series of air blast jets playing on its outer face. A 12-point temperature indicator is fitted to enable the temperature of the press to be taken at representative points. When changing the dies and in other exceptional circumstances it is possible that the lead in the die will solidify and prevent dismantling operations. To overcome this an air blast hand torch connected by 1 in. flexible tubes is available. The compressed air is supplied from a Connersville type compressor driven by an electric motor.

Tests have been carried out to determine the efficiency of the plant (a) in terms of tons of metal melted per therm of gas consumed, and (b) the amount of gas consumed per yard of cable sheathed.

Table I summarises the results obtained during a working day of approximately nine hours.

It will be apparent that the amount of metal melted per cu.ft. of gas consumed will vary according to the type of cable being sheathed—*e.g.*, the larger diameter cables will require more metal per yard run; hence more metal will be melted while less gas will be required to maintain the metal at temperature before it is used. If there is a breakdown, however, and no metal is used for several hours, gas will be consumed to maintain the metal at its working temperature.

In view of the fact that the pots are maintained at working temperature

TABLE I
RESULTS DURING WORKING DAY (APPROXIMATELY 9 HOURS)

Date	No. of hours	Gas cons. cu. ft.		Total weight of metal melted in lb.	Metal melted		C.V. B.Th. U/cu. ft.
		Small pot	Large pot		lb./therm	Gas in therms per ton	
11.11.52	6.3	900	2,000	8,144 (3.6 tons) ..	560	4	503
12.11.52	6.75 inc. 4-hour hold up	830	1,500	4,617 (2.06 tons)	390	5.7	502
13.11.52	6.5	980	1,660	8,184 (3.65 tons)	620	3.6	503

TABLE II
RESULTS OVER 24 HOURS

Date	DAY Gas cons. cu. ft.		NIGHT Gas cons. cu. ft.		Total gas consumed over 24 hrs. (cu. ft.)	Metal melted (lb.)	Metal melted		C.V. B.Th. U./cu. ft.
	Small pot	Large pot	Small pot	Large pot			lb./therm	Gas in therms per ton	
11.11.52	900	2,000	1,900	3,400	8,200	8,144 (3.6 tons)	198	11.3	503
12.11.52	830	1,500	1,790	3,340	7,460	4,617 (2.06 tons)	124	18.2	502
13.11.52	980	1,660	2,500	2,800	7,490	8,184 (3.65 tons)	206	10.9	503

TABLE III
YARDS OF CABLE SHEATHED PER CU. FT. OF GAS CONSUMED

Outside dia. of finished cable (in.)	Thickness of lead (in.)	Volume of lead per yard run of cable (cu. in.)	Calculated weight of lead per yard run in lb. (wt. of lead 0.408 lb./cu. in.)	Yards of cable sheathed per cu. ft. of gas cons. during working day (calculated)
0.710	0.060	2.37	0.9675	3.2
1.442	0.1	7.2	2.91	1.16
1.740	0.080	7.8	3.18	0.975
1.740	0.090	8.64	3.52	0.88
1.760	0.090	9.06	3.70	0.84

throughout the night it is important to note the amount of metal melted per therm of gas consumed throughout the whole 24 hours of the day. These figures are given in Table II.

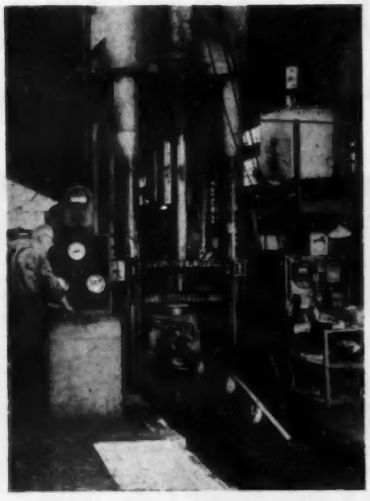
Another factor contributing to the variation of gas consumed per lb. weight of metal melted is the frequent need to change the dies several times during the day.

To illustrate these facts, figures have been calculated for typical cables which are identical with those set out in Table III, B.S. 480:1942, comparing the number of yards of different types of cable sheathed per cu. ft. of gas consumed. For this calculation a figure was taken of 3.1 lb. metal melted per cu.ft. of gas, representing the best obtainable in the tests described below.

The full on gas rates are as follows:
Small pot: 655 cu.ft. per hr.
Large pot: 667 cu.ft. per hr.

Both pots operate at a burner pressure of 1.4 in. w.g.

(The foregoing is abstracted from a recent report of the Gas Council Industrial Development Committee, the work being carried out by the N. T. Gas Board)



The extrusion press at the works of Metropolitan Electric Cables.

Gas and Electric Competition

THE nationalised industries appear to be regarded as fair game for an extraordinary number of attacks, assessments, and probings by persons well informed, half-informed, or not informed at all. Newspapers provide the most powerful and satisfactory platforms for these self-appointed judges, but since space is at a premium it is to the lesser publications that they turn in search of a means to inflict their views on their fellows. Mr. E. K. Hawkins, the author of 'Competition Between the Nationalised Electricity and Gas Industries,' published in *The Journal of Industrial Economics* (Basil Blackwell, Broad Street, Oxford, price 10s.) must not feel that these somewhat ungenerous remarks are directed specifically at him, but he must appreciate that as a student of the subject (albeit he is a Research Fellow at the West African Institute of Social and Economic Research, Ibadan, Nigeria), he is but one of many whose aim it is to publicise their views on a highly involved and tricky subject. He is on the outside looking in, and although this has the advantage of giving him a certain freshness of vision and approach, like all who peer through a window he cannot see the whole room. He bases his opinions on published reports of various kinds, and although one must admire the quite wide range of material so used, it must be pointed out that reports of an industry no more reveal the exact way in which that industry will progress than the reports of an army reveal who will win a war.

The author dallies with thermal efficiencies and goes on to examine the precise nature of competition and its effect on coal conservation. His conclusions, despite the use of such 'verbosities' as 'tri-lateral monopoly,' etc., are incomplete, but they make interesting reading and suggest that had more facts been in his possession, they might have been shrewd and of value. Mr. Hawkins is clearly in his element when he tackles the question of tariffs, and his analysis reveals a good understanding of the fundamentals of price structure. But here again it is insufficient information which prevents him reaching any concrete conclusions. However, it is worth noting that, having stressed the fact that tariff structure is a powerful weapon of competition, as well as a means of covering costs adequately, the author states: 'The "ideal tariff" would ensure that the price to each consumer reflected the costs involved in supplying him. The actual situation that has developed is that the relative prices facing the consumer do not reflect these costs, and consequently competition between the industries for this and other reasons does not fulfil the function of allocating resources on the basis of consumers' choice and opportunity costs. There are two sets of arguments that support this view; one set is concerned with the evidence that suggests that the tariffs do not adequately reflect the costs involved; the second set goes further and questions the relevance of relative prices as being important determinants of relative consumption.

Uniform Price

Mr. Hawkins goes on to discuss the advisability or otherwise of a uniform price for the whole country and points out that this would implicitly involve a judgment that some consumers should get a service at less than its cost, while others pay more than its cost. As the author says, the idea seems to have been abandoned on competitive grounds.

Later he criticises the new electricity variable block tariff. Its weakness, he says, is that the standing charge is correlated with size of house and hence with incomes, and this is made worse from the viewpoint of competition with gas by the fact that the consumption of gas and electricity rises as income rises. He gives reasons for thinking that the elasticity of demand for gas and electricity is low and suggests that the income elasticity is more important than the price elasticity and that the price of gas is not an unimportant variable affecting the consumption of electricity.

Passing to the question of whether free competition based on tariff structures and with free consumer choice will be at all effective in allocating scarce resources in an economic way, the author points out that the case for competition depends on the differences in relative prices being significant at the margin of consumption, when taken in consideration with other factors, such as convenience, quality of service offered, etc. Apart from the lack of the freedom of investment, the most formidable objection to the case for competition lies, in the author's view, in the difference between the tariff types. The situation might be different if both fuels were sold on tariffs based on identical principles, but 'there is no information by which this supposition could be checked.'

Once again the author is brought to a full stop after following a promising line of thought, and he finally exhibits—so it seems to us—a certain bitterness regarding the lack of information. 'One result of nationalisation,' he complains, 'is the reduction in the amount of published information available about the two industries.' For example, the annual returns of the gas industry published by the Board of Trade have not been continued by the Gas Council.' He also feels that another feature of the published information that could be remedied is the difference between the amount of information available about the gas industry compared with that published about the electricity industry. 'A glance at the *Statistical Digest* of the Ministry of Fuel and Power or at the reports of the nationalised industries will show that much less data is available for the gas industry than for electricity.'

Mr. Hawkins has our sympathy, but his remarks suggest that he is indulging in that favourite gambit about the 'good old days.' Information available about the two industries before nationalisation, although perhaps more explicit in certain respects, was as a whole far more sketchy and misleading than it is today. And we would add that an attempted analysis of the merits of competition based on tariff structure in the pre-nationalised era would have necessitated a degree of long-term field work which is wholly unnecessary in these dull days of centralised information.

The Institute of Municipal Treasurers and Accountants has issued its eighth annual *Return of Rates* and Rates Levied per Head of Population covering the municipal year 1953-54. The return follows substantially the form of previous tabulations which have included the data formerly published in returns prepared by the Borough Treasurers of Preston and Chesterfield respectively. The first section contains particulars of rates levied, and the second section shows particulars of rates levied per head of population. The figures relate to all the 83 county boroughs and 28 metropolitan boroughs and a large and representative selection of 213 non-county boroughs and 208 urban districts. Arithmetic averages show that the average rate levied increased over the previous year. For county boroughs the average was 22s. 9d. against 21s.; for metropolitan boroughs 20s. 4d. against 18s. 4d.; non-county county boroughs 23s. 3d. against 21s. 1d.; and urban districts 23s. 4d. against 21s. 1d.

Peterborough Output Trebled in 15 Years

IT is of interest to see what one's predecessor in an office made the subject of his address during his term of office. I had to go back some considerable way, just over 60 years, to find what my one time predecessor, Mr. J. Barton, Engineer and Manager of the former Peterborough Gas Company, had to say in his address. He was, incidentally, the second President of the old Association, and I was interested to find that given place of honour was his comment that we were completely in the hands of the colliery owners, who could put up the price of coal when and how much they liked, and that the poor gas engineer had no option but to accept such increases. If he were here today, he would feel that conditions are even worse than they were then, as we have not today even the free choice of coals.

The Peterborough works is one which, during the period 1938 to date, has undergone very considerable expansion in output, rising from an annual output of approximately 300 mill. cu.ft. in 1938, to 600 mill. in 1946, and 930 mill. last year. It will be seen that during this period the output has trebled.

Commendable Foresight

The plant in 1938, with the exception of a small carburetted water gas plant installed the previous year, was of very old design, and generally had reached the end of its useful life. My predecessor, Mr. Raymond Prince, with commendable foresight, installed the then latest design Woodall-Duckham carbonising plant of two mill. cu.ft. daily capacity, in a house prepared for a 50% increase. This additional plant of 1 mill. cu.ft. daily was, as a result of the greatly increased demand for gas for industrial purposes in Peterborough, put in hand at an early date, becoming operational in 1944.

The necessary ancillary plant was installed, which gave a very well equipped works and one which was worked to a high degree of technical efficiency producing gas into the holder at a very cheap rate. This was the stage when I took over in 1946. The directors at that time were of the opinion that the high annual volume of gas distributed would not be maintained. Our experience, however, has been that the output continued to increase, and so it became necessary to consider an additional gas manufacturing unit. The former directors accepted a recommendation that an additional carburetted water gas plant should be installed, but before the order could be placed, nationalisation took place.

The Area Board appreciated the need for pressing on with this new plant, and the choice was made of 2 mill. cu.ft. per day Power-Gas fully automatic hydraulically operated unit. As a neighbouring undertaking, Bedford, was also in need of additional plant of a similar capacity, a duplicate set to the Peterborough one was chosen for Bedford. There are several advantages in adopting this policy of duplication—the avoidance of duplication of spares; the availability from both districts of spare trained operators and personnel; and the interchange of experience between the districts. We recently had a demonstration of this when there was some difficulty experienced at one works, whereupon the standby crew from the other works were made available, but fortunately not required.

The water gas plant has proved its worth from a gas making point of view, and is very popular with the operators, who soon grasped the working of the new plant, which has given extremely little trouble. The carburettor—of the chequerless counter flow oil injection type—has been specially modified by extension to give better oil cracking.

We have been fortunate in the method of coke supply to the plant. Instead of the more usual method of dropping screened coke into the normal coke storage hoppers of the works, dropping this into lorries and later in a skip hoist pit and there to the storage hoppers with consequent breakage and breeze formation at every stage, we take large coke from the scalping screen in the retort house, transferring this by means of a rubber belt conveyor direct into the C.W.G. plant storage hopper. No extra labour is required, a stoker from the retort house merely operating a change-over flap on the coke screens to give the necessary supply.

Before construction we were advised that the air blower units would probably make enough noise to constitute a nuisance to nearby neighbours, but by careful siting of the blower house, and care in the site position for the air intake flue to the blowers, coupled with air locks on the access doors to the blower room, it has been found possible so to deaden the noise of these machines that additional sound proofing has proved unnecessary. In addition to capital saving this has obviated running lights during the hours of daylight.

Tar and Liquor Separators

A point of interest in connection with this plant is that the tar and liquor separators (designed for two such plants) have not been charged with coke in the usual way, as owing to the somewhat higher density of the C.W.G. tar produced by this system, and the large capacity separators now run in parallel, coke has been found quite unnecessary. This must obviously save money, and avoid a dirty working job for the men in cleaning out the pits.

A rather interesting point worthy of note, is that the relief holder which was perfectly satisfactory for the small C.W.G. plant referred to earlier, while of adequate capacity, had inlet and outlet mains of 10 in. dia. which were totally inadequate for the new water gas plant. These had to be replaced with mains equivalent to 24 in. dia. inlet and 20 in dia. outlet. Fortunately, it was found possible to effect the replacement in the form of a rectangular compound box main with a midfeather separating the inlet and outlet streams, thereby avoiding material structural alterations to the masonry tank which is mainly below standing water level in the ground around the tank. The holder tank was emptied and the main successfully inserted. In view of the considerably more rapid rate at which gas was to be handled by this holder, certain safety precautions have been, or are about to be installed, to avoid the risk of pulling in the crown through over emptying. First, a mechanical one in the form of an automatic butterfly valve in the outlet main arranged so that it is operated by striking gear on the holder crown when

F. A. RHEAD

Peterborough Output Trebled in 15 years was the theme of the address to the Third Annual Meeting of the Eastern Section of the Institution of Gas Engineers, by the Chairman, F. A. Rhead, B.Sc., A.M.I.C.E., M.Inst.Gas E., M.Inst. F. at Clacton-on-Sea.

this is lowered to a pre-determined level, at present about 2 ft. above tank level. Furthermore, two electric safeguards for the same purpose, the first being an electric switch which will break the motor circuit, and therefore close down the Rateau turbo-exhauster when the butterfly valve is in a closed position; and finally, a pressure operated electric switch, which in the event of the gas pressure in this stage, make it clear that while the Rateau turbo-exhauster falling below a pre-determined limit, also closes down the C.W.G. Rateau turbo-exhauster. The turbo-exhausters are electrically operated, and in addition to their primary exhausting function, assist considerably in removing tar from the carburetted water gas. I should, at this stage, make it clear that while the Rateau turbo exhausters are electrically operated, the motors being placed in a separate motor room driving the exhausters proper through a flame-proof gland in the division wall, the coal gas exhausters are of the conventional Connersville pattern steam driven.

In order to have all exhausters interchangeable, a 14 in. gas main connecting the inlet exhaust mains of both coal and water gas streams has been installed and fitted with a specially adapted Bryan-Donkin retort house governor with the object of using either type of exhauster with either coal or carburetted water gas in case of emergency. One reason for this is a safety step in the maintenance of continuous coal gas manufacture in the somewhat unlikely event of steam supplies failing. I would say that we are most anxious not to carry undue standby boilers and the availability of these electrically operated exhausters, coupled with a 5 h.p. A.C. electric motor with direct-on starter to operate the coke extractors in the retort house makes this possible.

Economy in Steam

We have paid great attention to the economic production and utilisation of steam and have now succeeded in running the entire works at all times of the year with waste steam from the vertical retort and C.W.G. plants coupled with augmentation by producer gas when necessary. The three standby Lancashire boilers are to be fitted with Tricone type steam heaters, which will be used to keep these boilers up to approximately 60 lb. in summer, while one waste heat boiler is off for overhaul or through circumstances beyond our control, or in the winter for generating steam for holder anti-freeze purposes, should the requirements for steam become excessive. The system has now become so efficient that from pure waste heat steam there are occasions when a surplus of steam is available which is then passed to our generators for a production of a proportion of the works D.C. requirements. Elimination of three shifts of boilermen effects a labour saving of nearly £30 per week. I would add that we regard the careful utilisation of steam as one of our very important forms of economy, with consequent raising of works efficiency.

I give some examples of the way in which this has been effected:—Taking the retort house first, the very obvious expedient of collecting exhaust steam from the boiler feed, liquor circulation and coke extractor steam prime movers, into a feed water heater, has resulted in a pre-heating of boiler feed water from 130°F. to 200°F. and has obviously resulted in a saving of fuel, or really the generation of additional steam for the same fuel use which very soon paid for the £175 capital cost of the heat exchanger installation.

Our next move was that of utilising the exhaust steam from the exhausters, a continuous though variable amount of steam depending largely on the season of the year. A 5 lb. per sq. in. low pressure steam main has been installed, adequate for heating purifier gas heaters, for preheating water in the lime-soda water softening plant and for practically the whole of the 700 lb. of steam per hour requirements for the liquid concentration plant.

Importance of Insulation

There is also a further form of economy which is kept under constant review. This started when a careful survey of existing steam pipe runs was made. Two things were found:—(a) very obvious, but very often overlooked, the question of absence of insulation on the pipes, and (b) very important, but not so obvious, the question of inordinate lengths of run of steam piping (usually of small diameter) to various steam units. It was found that these have grown up as time has gone on, by adding a length or lengths of piping to an existing steam service, as seems simple at the time, without making a critical examination of how the steam service can be taken from the nearest steam main to the point of use. It was found that a small length may eliminate a considerable length which has grown up by the haphazard method of adding extra lengths. The amount of condensation obviated by attention to these two points is very considerable.

Early in 1946, our largest gasholder, capacity 880,000 cu.ft., was condemned by the holder inspector but given limited life to enable a replacement to be ordered and erected. A 2 mill. cu. ft. capacity holder was selected, the order given to Newton Chambers, who completed it in 1949. Several points of interest in the design are worthy of mention—anti-flooding inlet and outlet mains were fitted to this holder, although none had been fitted on the other two town gasholders. This omission, of course, could not easily be rectified, but as the new holder was virtually to be the main one supplying the city, it was felt that a reasonably effective cover from the flooding of the town

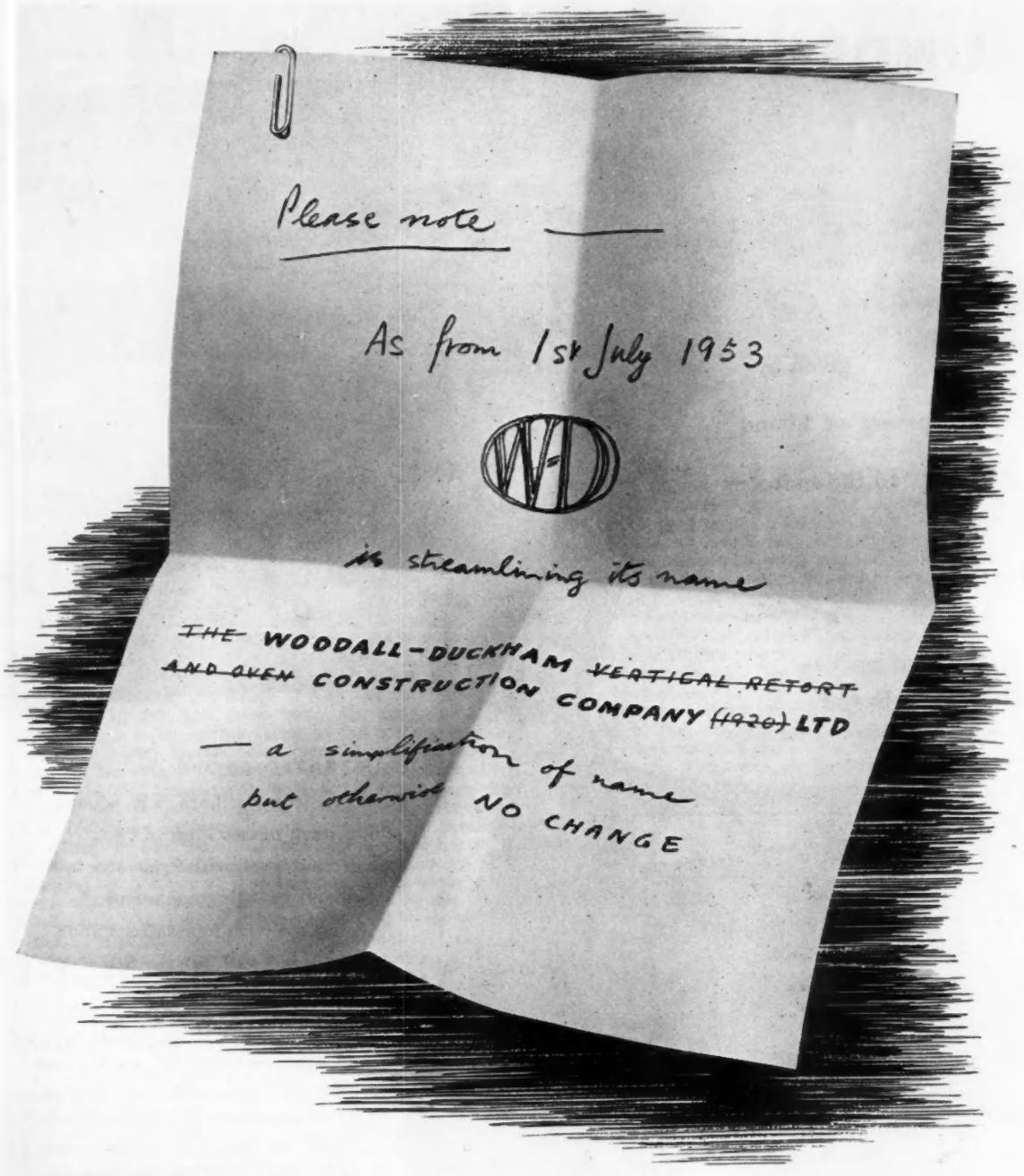
(*Continued on page 103*)

Members of the Eastern Section at Clacton

See also P. 103

A. L. West (Parkinson and Cowan), A. W. Evetts, M.C., and R. H. Hutchinson.

S. M. Milbourne (C. and W. Walker), H. C. Dunbar, Jack Wood (Radiation), and J. Hunter-Rioch.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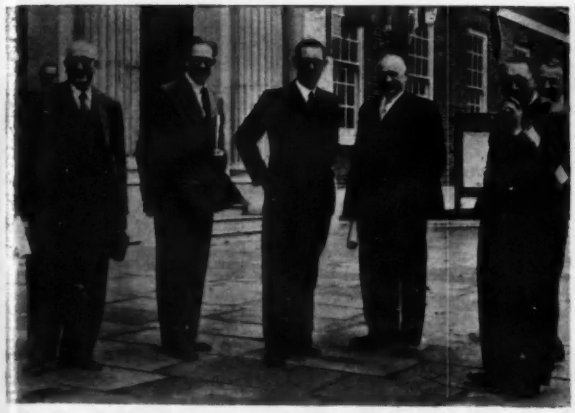

F. C. Wilson, W. Derrick Wilson, B.E.M., R. W. Hilham, A. Blenkiron, and J., Anderton.

T. C. Battersby and C. A. Macleod (R. and A. Main).

mains would be achieved. Particular attention was paid to the safety of any man who may be working on the holder, for instance, the handrails round the crown were increased from the normal three to five, with the bottom one 7 in. only above the crown, thereby ensuring that anyone slipping on the crown could not fall below the lowest rail. Staircases were fitted on each lift, again, of course, with handrails, thereby making the access to the crown and to the lifts easy and safe. Experience on a holder of similar size elsewhere had shown the difficulty of replacing or attempting to replace anti-freezer hoses under bad weather conditions. We, therefore, adopted anti-freeze pylons and these were so modified as to incorporate a ladder giving access to the hose connection at the top, safety guards being placed round the ladders to ensure the safety of the men working on them and to give complete freedom to both arms when working thereon. A permanent 1 cwt. crane on the crown is fitted for lifting tools and paint. In order to preserve and extend its life, the lifting rope of this crane has been removed and is only re-installed on the relatively rare occasions when any work is required on the crown or at an intermediate point, and which calls for the use of the crane. Windguards round the cups were eliminated by deepening cup and grip seals by 6 in. This action was taken to obviate continuous attention and replacement, if required, of windguards.

Use of Electricity

In reply to the recent demand for more economy in running the works, a careful examination was made of our various sources of power and their efficiency of utilisation, which included a careful examination of the best source of supply of electricity. Our electricity supplies for the older sections of plant are D.C. and for the more modern plant, A.C. The D.C. supply is generated on the works in reciprocating steam driven generators by Peter Brotherhood, Ltd., with generators. Though old, they are capable of many years good service. A.C. current is received from the public supply and we are assured of an almost continuous supply through the fact that three different incoming cables served by various parts of the grid, serve either of two transformers belonging to the Eastern Electricity Board in a sub-station situated a few yards only from the works, which, in turn, supply twin cables to our works main A.C. board (three-phase 440 V.). In the course of the considerations about our ultimate source of supply for D.C. (either home generated or through a mercury arc rectifier), it was found that the cost of fuel only, *i.e.* not including wear and tear, etc., on the generators, cost approximately 4d. per unit, whereas the cost of electricity from the public authority was 1.6d. which, allowing for the rectifier loss, put the price at 1.75d. per unit, an obvious minimum overall saving of over 2d. per unit on our home generated price. A decision was, therefore, made to purchase from the Eastern Electricity Board, electricity for general works use and to produce ourselves only when genuine surplus waste heat was available, always being sure that augmentation of waste heat by burning producer gas was not being carried out. The main works D.C. switchboard was totally inadequate and failed to meet the specifications of the Institution of Electrical Engineers, and further, this board was designed solely for use with steam generators or D.C. current generated in a 50 kW mercury arc rectifier fed by the public supply. More important, this switchboard did not permit of any separation of the many circuits supplying the works. A new board was designed and installed and the opportunity taken to fit this with two main busbars, one taking home generated supply and the other public supply through the rectifier.

Each one of the main works circuits, of which there are many, is fitted with a changeover switch enabling electricity to be taken from either main busbar as required. This enables a simple control of the use of electricity from either source and when home generated D.C. is being produced, enables us by the simple system of selected appropriate loads for our generators, to maintain the steadiness of the general works steam pressure. The electricity system in the past was afflicted by many minor faults. We have now put earth leakage indicators on each bus main, with the result that any faults are immediately shown up and a very simple operation by the works electrician shows the faulty circuit which then receives attention.

A common experience in the past was to find that pipe flanges of more than one British Standard pipe flange table was in use on the works and that in case of a breakdown, we might not have a unit with the right flange or that the distance between flanges of various units differed. This sort of thing obviously on occasion caused grave inconvenience in an emergency, in that drilling might have to be altered or distances between flanges altered to fit different units. We, therefore, have standardised on B.S.S. Table 'F' for all flanges irrespective of their duty. This has resulted in a simplification of stocks, definite saving in money, less stock being carried, avoidance of delay through alterations to connections, etc. This has proved a definite saving as I mentioned earlier, but it is, of course, an intangible asset.

Saving Maintenance Time

While on this general subject, I would add that we are now finding that in the painting of service pipes in the appropriate colour code laid down, we are simplifying loss of time in maintenance work, to say nothing of brightening up the works. A scheme is now in hand for the concen-

tration of general works service tar and liquor pumps into one point under cover. This will simplify very considerably the existing system which, like Topsy, has just 'growed up' over the years and will lead to the elimination of certain pumps. The new pump system is so arranged that each pump will duplicate the other and result in the elimination of other widely dispersed pumps.

By undertaking this removal, we shall cut out hundreds of feet of steam pipe replacing this with approximately 40 ft. only. It will, further, have the advantage that the connections will be simple and, therefore, there will be less likelihood of mistakes. Incidentally, the pumps will be capable of dealing with tar, dirty liquor, clean liquor and C.W.G. tar streams.

So far, I have been dealing with works problems, and I now propose to turn briefly to distribution.

Peterborough gas undertaking has always been known in the city for having a good distribution system, with adequate pressures throughout the district. Although we have a considerable length of main, gas pressures are only reinforced in one part of the district, that is in the northern area, from an intermediate pressure system. In 1946, the peak rate of compression into this medium pressure system was 66,000 cu.ft. per hour fed at a pressure of 5 lb. p.s.i. In laying additional low pressure mains, the greatest care has been taken to assist the areas fed by the medium pressure main with the result that the present maximum peak of compression today is in the order of 5,000 cu.ft. per hour only. This has, of course, resulted in a considerable saving of steam for compressors and it leaves the compressing units available for supplying gas to the now authorised integration scheme coupling Peterborough—Whittlesey—March—Chatteris—Wisbech.

In 1946, we were approached by F. Perkins, Ltd., diesel engine manufacturers, to undertake the heating of their post-war factory at Newark, Peterborough. As this firm had located its factory on a newly designated industrial estate, it was decided to put in an 18 in. L.P. main working at holder pressure and capable of ultimate extension to a site adjacent to the very large Dogsthorpe housing estates, this main to pass 250,000 cu.ft. per hour with a pressure loss of 25 in. W.G. if required; this would call for boosting plant not yet installed. The Area Board has now completed this final section of the main with the result that it further contributes toward the reduction of load on the compressors. An 18 in. district governor serving the Dogsthorpe area and a 16 in. one to serve Perkins' factory are fitted on the main at Perkins' works.

Industrial Space Heating

Those who had the privilege of listening to the Presidential Address given by Mr. G. E. Currier, will, I think, have been struck by his great plea for the increase of efficiency of utilisation of gas; I quote from his address—'Savings of this nature, equivalent to substantial reductions in the price of gas, are a most valuable advertisement of the virtues of gas as a fuel for industrial and commercial uses, making an important contribution to that expansion of gas sales which is necessary as a counter to the rising cost of capital, labour and materials.'

We can quote an example of that in the case of one of our own industrial consumers whose factory is gas heated. In the year 1951, 50% only of their factory was completed and fully operational. Their annual consumption at that time was 113 mill. cu.ft. At this period the factory consisted structurally of 9 in. brick walls on three sides, corrugated iron on the fourth, and a Big Six asbestos roof. At this time I had long discussions with their structural engineers and senior officers advising them to insulate thermally the non-brick portions of the building wherever possible. The factory was then increased by 100% in size concurrent with which the completed factory was thermally insulated in accordance with my recommendations. The following year's gas consumption, despite a small increase for process work, was very small, increasing by 7¼ mill. cu.ft. only to 120,500,000 cu.ft. I should add that this is one of the largest factory buildings in the country to be entirely gas heated, being maintained at 60°F. at all times during the heating season. Conversation with one of the directors recently disclosed how pleased they are with the gas heating system and particularly the fact that accepting our advice has proved such a saving for them.

I have given you a number of points to which we at Peterborough have paid attention with most satisfactory results. They are gratifying to our staff here, who regard the achievement of economies, intangible or otherwise, as a well worthwhile job of work. In the final test it is the actual £.s.d. saved which counts, but as I have not yet the final accounts for the three financial years, I would like to quote our fuel and carbonising efficiencies for these periods to show what has been achieved, as these are bound to have their effect on the financial side.

	1950-1	1951-2	1952-3
Carbonisation efficiency ..	83.3	83.4	85.4
Fuel efficiency	81.7	81.5	83.6

I would add that we have no intention of resting on our laurels and indeed have several other ideas which we are pursuing in the hope that after careful balance sheets for these are prepared we may feel that these are worth implementing. Items for economy are not obvious, otherwise we should have failed in our duty as engineers to allow them to remain. We must hunt them down, critically consider the economies of each case—and then if a case is made out, take prompt action and remember the old saying of our good friends from north of the Border—'Many a mickle makes a muckle.'

I feel I cannot leave the subject of my address without paying high tribute to the support I have received in this work from my technical staff whose enthusiasm for technical efficiency is most encouraging.

DELEGATION OF SERVICES

THE Institute of Municipal Treasurers and Accountants has rendered a useful service not only to county and municipal officials but to all concerned with present-day problems of the decentralisation of administration in publishing under the title of *Delegation of Services Within Counties* a research study written by J. R. Sampson, County Treasurer of Staffordshire, and sponsored by the Research Committee of the Institute. The gas industry was never concerned with the specific problems discussed in the book, for in pre-vesting days when about a third of the industry was municipally owned there was only one county council—Lanarkshire—gas undertaking, but the overall desirability of county councils delegating work to local councils is in many ways analogous to the advantages which have become apparent as the result of the area gas boards decentralising much of their work among the divisions and districts.

The new book is a factual survey of the delegation arrangements of 38 selected counties for the main local government services concerned. It is not restricted to financial matters but takes in also the procedural arrangements for the executive functions of the services. Separate chapters are devoted to the principles of delegation, preliminary considerations, local health services, education, town and country planning, civil defence, highways and bridges, children and welfare, and general observations. The study is well provided with tables and statements showing the type and number of the various delegation arrangements, and it should provide a useful reference book to show the true facts of delegation as at present operated. The author has been at pains to keep the study factual and so to provide a survey which can be useful to both delegating and delegate authorities. At the present time the reform of local government is again becoming the subject of debate, and the issue of an impartial survey of delegation practice, which is so closely linked with local government reform, will, it is hoped, be timely. Copies of the study, which contains 168 pages and two insets, may be obtained, price 25s., from the Institute at 1, Buckingham Place, London, S.W.1.

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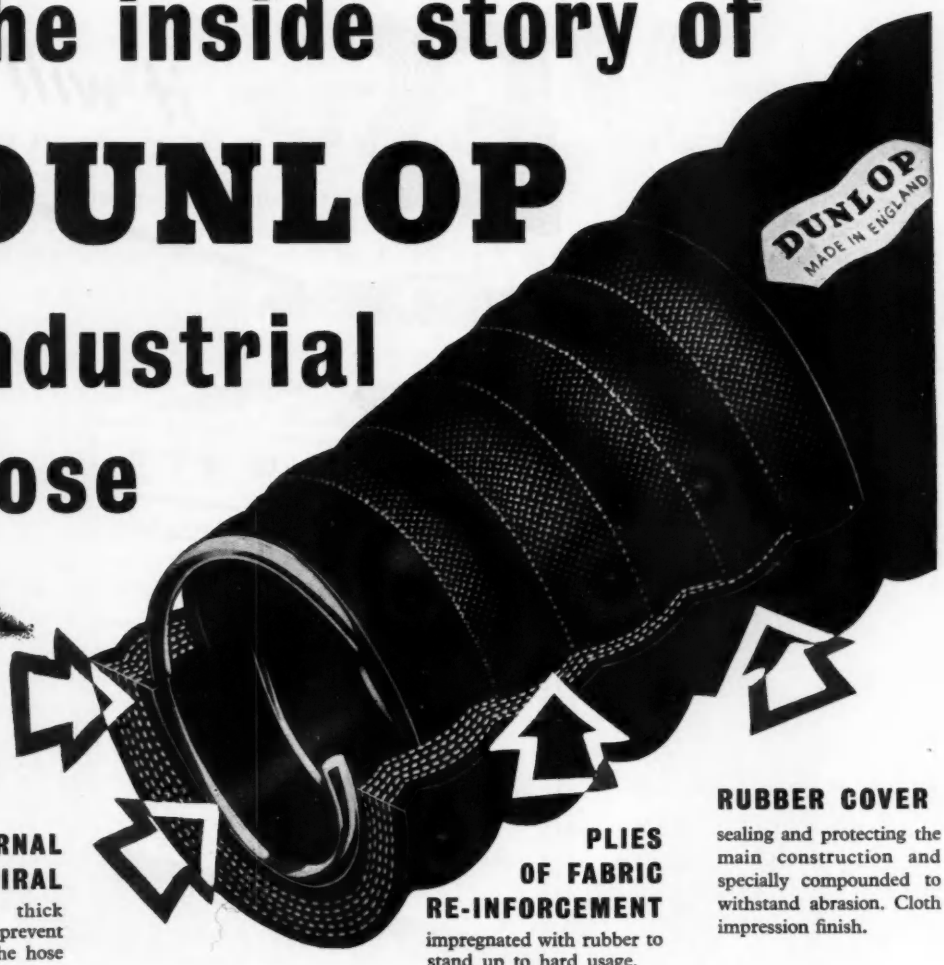

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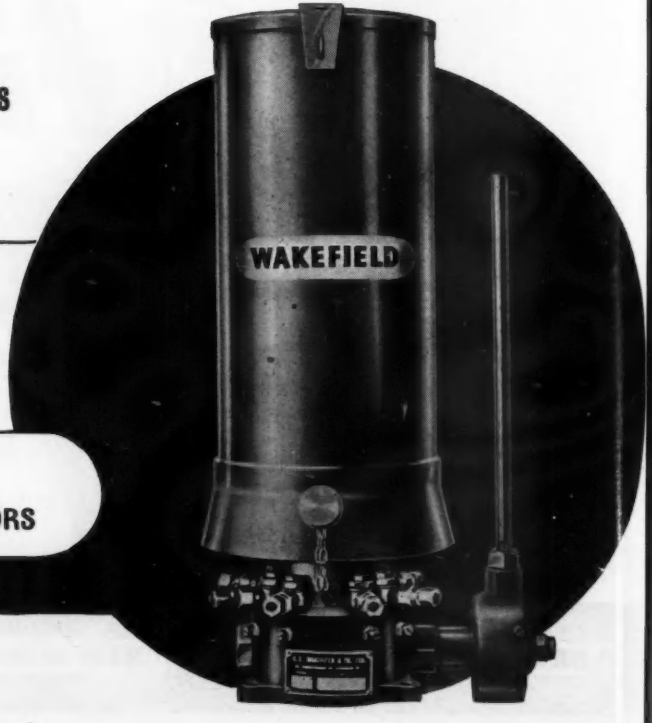

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THE CHANGING FACE OF THE GAS INDUSTRY

H. BUCKLEY *in his Presidential Address to the Wales and Monmouthshire Junior Gas Association*

MAY 1, 1949, was a momentous date in the history of the gas industry, and in the past four years the industry has been adjusting itself to its new form. The drastic re-organisation caused by nationalisation has been completed and future changes in organisation, it is anticipated, will be more evolutionary than revolutionary.

During these four years, the price of gas has risen very seriously—more, it must be admitted, than the price of electricity. Whilst the general public are inclined to ascribe the rise in gas prices to nationalisation, it is, in fact, due more to the increase in coal prices, and the disparity between the rise in the price of gas and the price of electricity is due to a number of factors. Coal prices to the electricity boards have not risen as much as to the gas boards. In addition, the electrical industry has obtained a better load factor on its plant and distribution systems, partly by shedding its peaks. A further aspect is that nationalisation caused less of an upheaval in the electrical industry as the system was already fairly well integrated prior to nationalisation, the Central Electricity Board having been functioning for 20 years and the grid was built during this period.

The electrical industry had made full commercial use of its advantages in various fields; thus electricity for commercial purposes—chiefly office and shop lighting—giving a reasonably even day load is sold at over 140% of the average price and up to 1950 public lighting, which is a very desirable load as it improves the load factor on the generation and mains system, was sold at 130% of the average price received. There has been only a slight increase to the domestic consumer in the price of electricity.

Planning—Small and Great

The conclusions of the Ridley Committee were awaited with considerable hope by many in the gas industry feeling that it would find in favour of a national fuel policy in which the gas industry would be certain to play a leading rôle. As a consequence, there was a feeling of disappointment throughout the industry with the findings of the report. When one pauses to consider, however, it is not surprising that the Committee did not suggest a national fuel policy, for large scale planning is foreign to our British make-up. As a nation we will plan smaller matters—we will encourage the sales of one commodity and discourage the sale of another by budgetary and tax controls—but we shun making any great national plan. This is evident in the policy of all Governments during the past 20 years to the problem of smoke abatement which is still costing us 10s. per ton of coal used on the domestic grate by way of damage to buildings from soot and sulphur dioxide. Our British way of avoiding large national plans has, however, the advantage that we avoid large national blunders and progress by a series of small steps.

H. BUCKLEY,
M.INST.GAS E., M.INST.F.,
Deputy General Manager and Engineer,
Pontypool Undertaking, Wales Gas Board

The three most important recommendations made by the Ridley Committee insofar as the gas industry is concerned are probably Nos. 38, 39, and 40. The first mentioned recommends that within an appropriate framework of prices and tariffs, competition between the gas and electrical industries should continue. The appointment of a Tariffs Advisory Committee having control over price policies of the nationalised fuel industries is suggested in recommendation No. 39, while No. 40 suggests the establishment of a Joint Fuel and Power Planning Board with limited powers. It is apparent that, apart from more Government (and political) control, the competition between the fuel industries will continue insofar as this is allowed by the National Coal Board which, by its price policy, can make or break the gas or electrical industry, or both. Each increase in the price of coal, however, puts another nail in the coffin of old King Coal for, as necessity is the mother of invention, each price increase means extra efforts by all industries to find a substitute form of energy and brings nearer the age of atomic energy.

While coal price increases will embarrass the gas industry, they might well give the inspiration to an inventive genius and lead to the introduction of a new process. Any process based on obtaining a gaseous fuel from a liquid, or solid, fuel must give a gas much dearer than the initial fuel, as the gas has to carry the cost of the fuel plus labour, power, capital, and administrative costs. One wonders if some new process cannot be found to obtain a combustible gas from the synthesis of common elements. The production of synthetic ammonia ruined the sulphate of ammonia market for the gas industry. Is it beyond the ingenuity of modern chemists and physicists to evolve a commercial method to dissociate a common substance into its component gaseous elements?

At present, the industry is groping for a new process. This is evidenced by a perusal of this year's papers to the autumn research meeting of the Institution of Gas Engineers. The continuous references to the Lurgi complete gasification process, methane synthesis, and peak load oil gas plant provide further evidence of the search. Pending the development of a new process, or a radical change in the existing process, the industry must enter on a period of planned development. The overall pattern is plain; it will involve the gradual shutting down of smaller works and the building of interlinking systems which, in time, may be interlinked amongst themselves.

The Philosopher's Outlook

The rate of development along these lines will be determined by the capital investment programme, the availability of materials, and the individual board's policy. It is going to be some years, therefore, before the full benefits of integration are reflected in the price of gas. During the period the industry must keep in check, as far as possible, further rises in the price of gas or we may lose one of our greatest advantages over our chief competitor. It is to the technicians on the job, who are mainly the members of the junior associations, that the boards must look to tide them over the difficulties immediately ahead. This is not only a challenge to all members of the junior associations, but an opportunity which we should grasp. Ours is the opportunity: ours will be the heritage.

Looking at the industry as a whole, there are a number of matters which, while not peculiar only to the gas industry, give cause for concern. Chief among these is the high price of coal, but also of considerable consequence is the high cost of new plant, mains extensions and distribution schemes. The high cost of carbonising plant, coupled with the fact that there has been no major improvement in the carbonising process since pre-war,

means that at 1953 prices it will not often be economic to build complete new works, for there is no material reduction in the cost of gas manufactured to counterbalance the high capital charges, which can reach 2d. to 2½d. per therm of gas made on a works built today unless an exceptionally high load factor is obtained.

There is, however, a silver lining and, while a 1953 carbonising plant will not give more therms per ton than its pre-war counterpart, there are possibilities of increasing the overall efficiency of the carbonising process, chiefly by the modernisation of the works power system. This can be done by ensuring the works has a proper steam and power balance and by ensuring that all steam is used twice, first for power and finally for process. The economics of raising the pressure of the waste heat boiler to nearer its maximum limit and employing back-pressure or pass-out turbines for the generation of electricity is worthy of close study. All other steam plant should be of the back-pressure type if the demand for process steam is sufficient. If it is not, then the use of electric motors will probably be more economic and cut out long-straggling and wasteful lengths of steam lines. Maximum waste heat must be obtained by placing the boilers as close to the setting as possible, employing re-circulation to cool the inlet gases if necessary.

Strategic Development

It is probable that future development will follow these lines with extensions to carbonising plant at strategically placed stations. While the economics are not yet clear, the development of the gas turbine, as described by Nicklin to the Manchester Junior Association of Gas Engineers and Gregson to the Institution of Gas Engineers, may well assist the industry in the future by providing cheap power.

Constant lip service has been paid to the need for a balanced works power system, and it has been known for more than 20 years that a works employing continuous vertical retorts can produce the whole of its internal power requirements from waste heat. Few works have, however, set out to do this, and it is not usual to find works with modern continuous vertical carbonising plant using up to, or above, 20 therms of power per ton of coal carbonised. Assuming this fuel for power has a value of 4d. per therm (approximate value of coke), the elimination of this fuel would reduce the cost of gas made by 1d. per therm when making 80 therms per ton. If the fuel is electricity, valued at 1d. per unit (roughly 2s. 6d. per therm), the potential saving is much greater. In passing, I might mention that the therms of fuel used as gas, breeze, and electricity per ton of coal carbonised during the December quarter on the new Pontypool works was 3.09 therms. This figure includes the power used in compressing an average of 120,000 cu.ft. of gas per hour to approximately 12 lb. per sq. in. in a 175 B.H.P. compressor. Without this load the works would have surplus power.

Considerable expenditure on this aspect is warranted, for an expenditure of £25 per therm of gas per day will cause capital charges of 1d. per therm (interest 4%, depreciation 30 years). The cost of a complete new works given by various authorities ranges from £40 to £60 per therm per day. It is hardly conceivable that modernisation of the works power system could cost half as much as a new works.

The provision of cheap power is particularly important when one considers the probable changes in the distribution of gas. Here we shall, no doubt, see many more grids, in all probability employing higher pressures than have been normal in the gas industry. Cheap power for compression is, however, essential to high pressure distribution and, unless it is available, it is probable that lower pressures, from 10 to 20 lb. per sq. in., and larger mains will be economic, and long distance transmission will be uneconomic.

The use of larger grids linking industrial towns, residential towns, and seaside resorts will improve the diversity factor and so improve the load factor on the works and distribution system, which, in turn, will reduce the capital charges to be carried by each therm of gas.

There appears little possibility of any major reduction in distribution costs, for the possibility of alternative materials, or a reduction in costs of laying, is remote. Improvement of the load factor on the distribution system and reduction of unaccounted-for gas, probably offer the greatest saving on this side of our industry. The former can be accomplished only by a wise sales policy. The tendency to support cookers only and, possibly, wash boilers in new property has not improved the domestic load factor. The space heating and water heating loads are still essential to the industry's economy. Sales in these fields are difficult at the moment, but ways must be found to encourage them.

The face of the gas industry is gradually changing, and it is the responsibility of all of us to keep abreast with the changes. The ultimate aim of all on the technical side of the industry is to produce and distribute gas as efficiently and economically as possible. The challenge to leave no stone unturned in the endeavour to keep costs down, while modernisation and development plans are put into effect, rests squarely at the feet of the juniors.

Our photograph shows members and wives of the North Wales Section of the Wales and Monmouthshire Junior Gas Association at Stoves, Ltd., Rainhill, Liverpool, on June 9. The party was received by Mr. J. Mercer, Sales Director, and Mr. E. L. Gould, Chief Area Representative. The afternoon programme included a tour of the factory, where the visitors were shown the advantages of modern production methods in the manufacture of gas cookers. The visitors were entertained at lunch and tea by the firm. Mr. J. Woodcock, Chairman of the Section, expressed thanks to the hosts.

UNIQUE ADAPTABILITY!

A new
main *appliance for*

CAFÉS · HOTELS
RESTAURANTS
BOARDING HOUSES
CANTEENS · HOSPITALS

Because it is readily adaptable to any space requirements, the No. 225 Griller and Toaster, in one or other of its arrangements, will meet all needs—from that of the small café to the large hotel.

It can be supplied as a single-unit Table model either with or without a 4″ counter stand... or as a two-unit Table model in either two-tier formation or side-by-side where space permits... or it may be fitted as a single unit or in two-tier formation on a stand 36″ high.

The overall size of the Single Grill is 19¼″ wide x 14″ deep x 11¼″ high, and the grilling area is 15″ wide x 8¼″ deep.

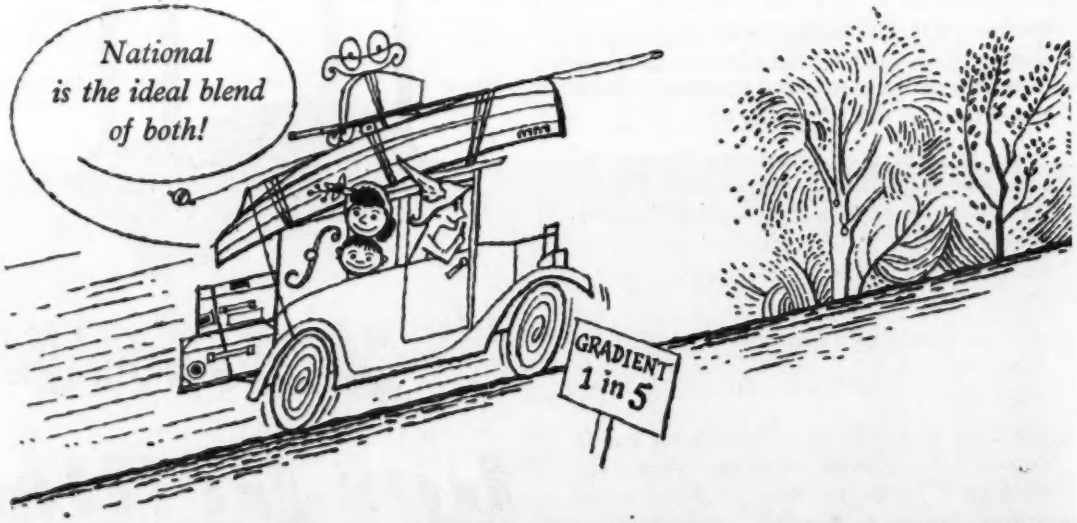
The No. 225 is efficient in performance and is strongly built. It can be had in Grey Dapple and Black or in Cream and Black Vitreous Enamel finishes.

R. & A. MAIN LIMITED
Gothic Works, Edmonton, London, N.18
Gothic Works, Falkirk

The **225** MAIN
Gas Griller and Toaster

Descriptive folder supplied on request

Benzole makes good petrol better!



NATIONAL BENZOLE MIXTURE

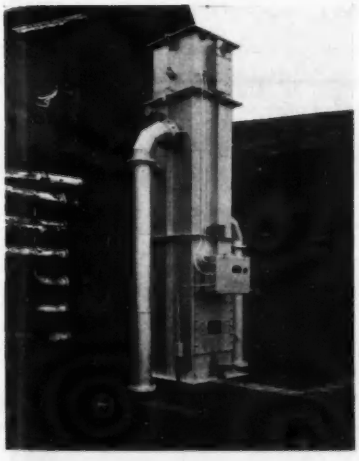
National Benzole Co. Ltd., Wellington House, Buckingham Gate, London, S.W.1
(The distributing organisation owned and entirely controlled by the producers of British Benzole)

Small Detarrer at Harwich

THE successful completion of tests on the new Whessoe Woodall-Duckham electro-detarrer at the Harwich works of the Eastern Gas Board marks a step forward in the history of the electrical precipitation of tar-fog from fuel gases. A detarrer is now on the market specially designed for gasworks with an annual output of less than 200 million cubic feet and at a price which makes the application of this process economically possible for such a works.

Most of the original electro-detarrers were developed to suit the requirements of the larger gasworks and coke oven plants. As the popularity of electro-detarrers increased, smaller units were called for, and these were essentially scaled-down versions of the larger detarrers. The smallest gasworks, finding that the cost was not reduced proportionately with capacity, tended to regard electro-detarrers as a luxury they could not afford. Now the designers, starting from the other end, have produced a unit which has a simplicity and economy in line with the user's needs.

Factors which contributed to the relatively high cost of a normal small detarrer included a special building to house the high tension rectifier equipment and a high tension cable to connect treater and electrics. In addition, since space is often limited in a small works, it was sometimes difficult to find room for the rectifier house. The new Whessoe design has eliminated these adverse factors.



The Whessoe W.W-D. Electro-detarrer at Harwich.

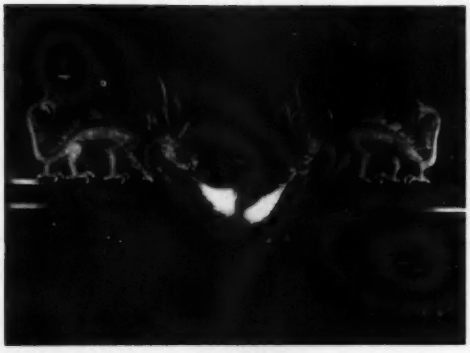
On the Harwich detarrer the H.T. rectifier has been placed at the top of the gas treater, and the unit has been made entirely weather-proof. Thus the cost of the rectifier house and H.T. cable, always an appreciable part of the cost of a normal installation, has been removed together with the need for more space than the small works could sometimes afford. The actual running cost of a detarrer has never been high, but some idea of the low cost of the Harwich detarrer may be gathered from the fact that, including insulator heating, the power consumption is less than 0.75 kW.

One further factor is that the combination of treater and electrical equipment in one unit facilitates the removal of the detarrer from one works to another, should this ever be required.

The prototype of this detarrer was ordered by the Eastern Gas Board for the Harwich works of their Ipswich Division—hence the name given to this new unit. Its proving trials have now been successfully concluded. It was originally designed as a standard-size plant for capacities up to 500,000 cu. ft. per day, but in the course of the tests it was found possible to increase the maximum duty to 750,000 cu. ft. per day without material increase in cost. The Harwich detarrer is now being marketed with this as its maximum capacity.

Dragons Breathing Fire

CAUSING GREAT INTEREST at night time during the Coronation celebration period by breathing fire from their nostrils every few seconds is this pair of fierce Chinese dragons in the front of the Eagle Star Insurance office at Bushey, Hertfordshire. Groups of passers-by stand watching the fiery monsters and even coaches with loads of Coronation sightseers are stopping on their return from London so that the passengers can see the spectacle.



Neat Gas assists the Dragon's Snout

Neat gas burners are fitted behind the dragons' snouts and ignition is effected by sparking plugs in conjunction with a 5,000 volt high tension transformer (suitably suppressed to prevent television interference). Solenoid gas valves are used together with a one-minute electric clock fitted with an interval cam to give an operational cycle of five seconds on and ten seconds off. The company's engineering staff were responsible for the installation with the co-operation of the Eastern Gas Board's Industrial Department at Watford.

Complete Gasification Plant

W. D. Acquire G. I. System

THE Woodall-Duckham Company has acquired from the owners of the G.I. system of complete gasification the exclusive rights to offer plants in accordance with the process in Great Britain for a long period of years. The agreement covering this arrangement is countersigned by all the participants of the G.I. Group—namely, the International Furnace Equipment Co., Ltd., Aldridge, Staffs.; Il Gas Integrale, Milan; Industriebedarf Gesellschaft m.b.H., Innsbruck; and Le Gaz Integral, Paris. All bind themselves to support the agreement with the Woodall-Duckham Company.

In conjunction with the engineers of the G.I. Group, members of the technical staff of the Woodall-Duckham Company, together with the Company's Consultant, Dr. H. Hollings, have made a thorough investigation of the G.I. complete gasification plants now in operation at Rome, Trieste, and Vierzon.

Although the Woodall-Duckham Company is completely satisfied with the engineering soundness and the technical performance of the plants they have inspected, their experience leads them to the conclusion that it is always desirable to build one full-scale demonstration plant in this country embodying all the information obtained on the Continent before launching out on the construction of a number of plants. Agreement has, therefore, been reached, in principle, between the North Thames Gas Board and the Woodall-Duckham Company for the immediate erection of a demonstration plant to work under English conditions.

The demonstration plant will have a nominal capacity of 2 mill. cu.ft. of gas per day. The installation will be designed to treat a wide range of coals as regards quality and size and to determine the practical upper limit of carburetting the gas.

Among the features of the W-D/I.F.E. complete gasification plant (G.I. system) are the following:—

(1) The plant works at atmospheric pressure and does not require the installation of an oxygen plant.

(2) It can be constructed in units of 1, 2, or 3 mill. cu.ft. per day and multiples thereof.

(3) The plant operates on high volatile coals having British Swelling Numbers of 3 and below. The production of coals of this class probably amounts to over 100 mill. tons per annum, the majority of which are not at present suitable for treatment in existing forms of carbonising plant in the gas industry. The Continental plants of the G.I. system are, in general, using sized coals, but in the demonstration plant investigations will be carried out to determine whether the process will work satisfactorily on smaller sizes of coal.

(4) The plant is designed so that the calorific value of the gas made by the complete gasification of the coal can be enriched by carburation with oil so that the plant will deliver gas of suitable quality for town purposes.

IMPORTANT MEASURES

● Note the powerful hinge and flagwire, the generous dimensions of the valves and the enclosed gear-box.

The A & M

D1/200 METER

The I.G.E. range, conforming to the specification of the Meters Committee of the Institution of Gas Engineers, was designed to give maximum registration in minimum bulk.

Full details of this range are available on request

ALDER & MACKAY LTD

New Grange Works, Edinburgh

LONDON - BRADFORD - MANCHESTER - BELFAST - CO

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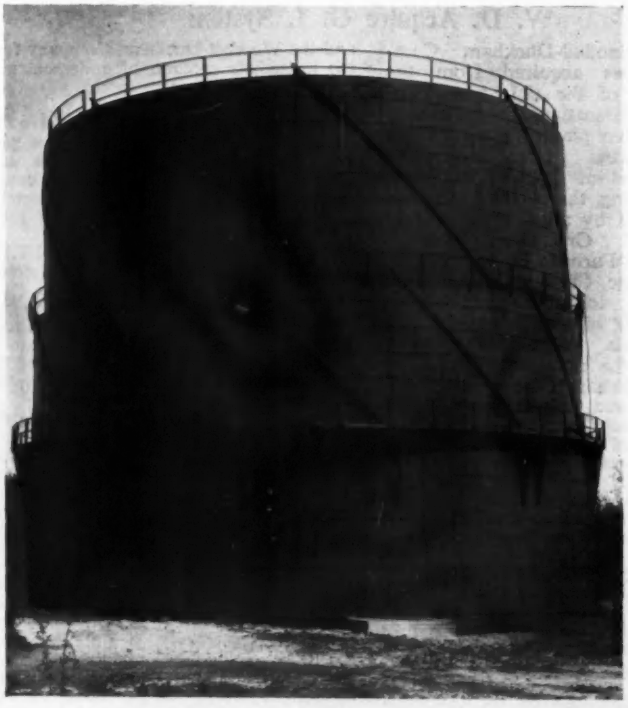

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CAPACITY 200,000 CUBIC FEET EACH

C. & W. WALKER

LIMITED

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'Grams : "Fortress," Donnington-Shropshire

GASHOLDERS

SPIRALLY-GUIDED
HIGH PRESSURE
WATERLESS
GUIDE-FRAMED

LONDON OFFICE:
70, VICTORIA STREET, S.W.1

'Phone : Victoria 5842.
'Grams : "Fortress," Sowest, London.

Long Service

A PRESENTATION CEREMONY took place in Wakefield, on June 26, when Mr. J. M. McLusky, Wakefield Group General Manager, presented long-service awards to North Eastern Gas Board employees. Those receiving awards were: 53 years service, Henry Osborne, District Superintendent at Morley; 51 years, Harold Gerbutt, Knottingley, and Harold Long, Sherburn; 49 years, Thomas Dey, Wakefield; 48 years, Alfred Bratley, Wakefield, and Harry Wood, Royston; 47 years, Alfred Wooffindin, Royston; 46 years, Henry Rann, Normanton; 44 years, Jonas White, Knottingley; 43 years, Edward James, Kippax, and Roland P. Trueman, Royston; 42 years, William Thompson, Castleford, and Harold White, Wakefield; 41 years, Jack William Crosby, Wakefield, Frederic Duce, Wakefield, John Fletcher, Group Office, Harry F. Ineson, Batley, Edward Lister, Wakefield, Reginald A. Walker, Castleford, and George W. Whitelock, Dewsbury; 40 years, David William Brunton, Wakefield, William Osborne, Morley, and Albert Wright, Royston.

South Western Gas C.C.

AT A MEETING of the Taunton Local Committee on June 25, members were informed by Mr. T. W. Jackson, the Gas Board's Sub-Divisional Manager, of the introduction of facilities for the hiring of domestic water heating apparatus which, formerly, it had been necessary to purchase. He also referred to the standardisation on July 1 of the calorific value of gas throughout the Area. The effect on the consumers within the Taunton Sub-Division would be that the heating value of the gas would be slightly increased. Mr. Jackson also reported the difficulties he had encountered from the Chard Borough Council in trying to have made open to their tenants full freedom of choice between the different types of fuel. He was not satisfied that there were valid reasons for that Council's exclusion of gas either on financial or on other grounds. The position was most unsatisfactory. The Committee were very much concerned at a Local Authority withholding from its tenants the freedom of choice and they instructed their Secretary to draw the Chard Council's attention again to their decided views.

Alderman John referred to experiments now being undertaken by the Bridgwater Borough Council in the different forms of water heating in Council houses. He said gas had emerged with great credit in all respects and the future availability of simple hire of gas water heating apparatus should be an additional inducement to Local Authorities to install it.

Other matters discussed were the pros and cons of opening showrooms on Saturday afternoons and the current schemes of integration of gas manufacture and supply within the area.

Scottish Juniors Golf

ON FRIDAY, June 12, members of the Scottish Junior Gas Association (Western District) held their annual golf outing at the Drumpellior Course, Coatbridge.

The winner of the Silver Cup was Mr. S. Patterson, Dumbarton, with a score of 65. Runner up was Mr. Hogg, Kelty, with 77, and the third place was shared by Mr. Alex. Walker, Motherwell (President), and Mr. L. Fletcher, (Parkinson Stove Co., Ltd.) with a score of 78.

The hidden hole prize was won by Mr. J. Williams, Paisley, with a score of 13 strokes at the 10th hole, par being 4.

At the conclusion of the game, high tea was taken in the club house, after which Mr. Walker, President, presented the cup and other prizes. Mr. Patterson, replying, expressed his appreciation of the outing, and of the successful organising arrangements which had been made by the President and Secretary, Mr. W. Green, Paisley.

Meter Rent Protest

THE TOWN COUNCIL OF BONNYRIGG, near Edinburgh, made a protest when the Scottish Gas Board imposed a hire fee for their meters in Council houses and other Council-owned property where the consumption of gas did not exceed 1,000 cu.ft. The Council protested that in 1945 the Scottish Gas Board agreed to maintain meters free of charge and that the imposition savoured of sharp practice. The Council, while leaving tenants to choose between a gas or electric cooker, had made it compulsory for tenants to take a gas wash-boiler. If the meter charge was persisted with, conditions would be altered.

The Gas Board replied that the charge had been made to protect heavy users of gas. Where the charge for gas was not sufficient to cover the cost of reading meters, or of providing standby pressure, they had introduced the charge to prevent those who had already high bills from being charged more. In view of the representation made it was not intended for the present to make the charge.

Edinburgh Corporation have finally approved of the decision to discontinue the provision of free gas or electric cookers in new Council houses.

Radiation Group Sales, Ltd., were bowled a fast one before the Second Test at Lord's. Their Large Apparatus Division, however, by rapid footwork, scored an effortless boundary. A No. 4224 Kendal Roasting Oven was ordered through the North Thames Gas Board and, as this was needed urgently for the famous 'Tavern,' Radiation were asked if they could effect especially speedy service. Time of delivery was halved; the roasting oven was delivered on the morning of June 24 and erected by their fitters, connected by the Lord's Maintenance Staff immediately, and was in use the same evening doing yeoman service in preparing for the following day's crowds.

London Juniors—Ladies' Day at Cambridge. A record gathering under the Presidency of Mr. C. D. Shann.

Guide to Cranes

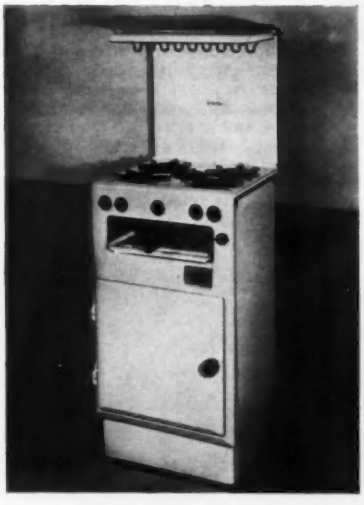
WE have received a book which will interest all concerned with developments in mechanical handling methods, and especially with the selection, installation, and maintenance of cranes. *Up-to-date Cranes in Modern Industry* is a practical and comprehensive guide.

In essence it is a catalogue detailing the very wide range of cranes made by Geo. W. King, Ltd., but it is very much more than a catalogue. It is a handbook of lasting value, a book of over a hundred large pages, strongly bound, lavishly illustrated, a first-class example of design and printing.

The introduction covers the whole field of crane design, materials, manufacture, operation, and maintenance. It is followed by sections dealing in detail with double beam overslung cranes, double beam underslung, single beam overslung, single beam underslung, Goliath cranes, jib cranes, and a further section on grabs, gearboxes, latches, pinions, current collectors, and other components. Copies are available on request from *Geo. W. King, Ltd., Hitchin, Herts.*

New De La Rue Cooker

THOMAS DE LA RUE & CO., LTD., Gas Division, have introduced a new version of their G.4 domestic cooker. Known as the G.4, Mk. III, it incorporates a number of modifications and refinements designed to give increased efficiency and improved appearance.



The new cooker is fitted with a one-piece cast iron top bar which improves appearance, minimises rattling, and simplifies cleaning. The four circular interchangeable pan rests have been redesigned to give improved ventilation with re-entrant based vessels and a small additional pan rest is fitted in the centre of the hotplate. The purpose of this additional pan rest is to provide a means of keeping a pan warm when other burners or the grill are in use. It also provides additional venting which lowers the hotplate temperature and this eliminates staining. The grill is fitted with a sheet metal cowl which directs the waste heat from the grill through the central pan rest position of the hotplate. This directional ventilation improves the heating of the grill frets, giving an increase in the effective toasting area, while allowing a reduction of the gas consumption of the burner at the same time.

The cast iron oven door fitted to the original G.4 cookers has been replaced by a door unit comprising pressed steel inner and outer door panels with a cast iron frame, and the cooker front has been re-styled to conform to the shape of the new door, giving cleaner lines and a more elegant appearance suited to the new sheer white and cream finishes. All burner taps are of a new design with front access for easy cleaning.

The new cooker is vitreous enamelled inside and out and is available in white, cream, or mottled buff and cream finish. Leg spats can be supplied as an alternative to the plinth.—*Thomas De La Rue & Co., Ltd. (Gas Division), Imperial House, 84, Regent Street, London, W.1*

TRADE NEWS

New Morris Van

The new Morris Quarter Ton van, equipped with the B.M.C. 800 c.c. overhead valve engine and independent torsion bar front suspension has unusual performance, roadholding, and comfort features for a vehicle of its class. The van body has a capacity of 78 cu. ft with an additional 12 cu. ft. of space available beside the driver

Mackay Industrial Equipment

The Merton Overloader, illustrated here, has recently become available for the first time in this country. It is already proving its ability to speed up many loading operations. Our photograph above shows the machine, fitted with a ½ cu. yd. bucket, working at Stoney Stanton. The eight-wheel Foden truck was loaded with 13 tons of 1½ in. granite chippings in 7½ min. and 6 ton trucks were loaded in 3½ min. The Merton Overloader is distributed by *Mackay Industrial Equipment, Ltd., Feltham, Middlesex.*

OXIDE

DUTCH AND DANISH BOG ORE
SPECIALLY ACTIVATED OXIDE OE IRON

Oxide supplied on loan or sale outright.
Highest prices paid for Spent Oxide.
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GAS PURIFICATION & CHEMICAL COMPANY LIMITED

ESTABLISHED 1873

PALMERSTON HOUSE, OLD BROAD STREET, LONDON, E.C.2.

Telegrams: "Purification, Stock, London." Telephone: London Wall 5077

FIRE!

PRODUCTION LOST BUT FOR

NU-SWIFT!

A spark...a flash...fire blazing...dial 999! But for at least five minutes that blaze will be YOURS alone! Reliable Nu-Swift is the world's fastest and most certain fire-killer.

NU-SWIFT LTD · ELLAND · YORKS

In Every Ship of the Royal Navy

"KLEENOFF" *

THE COOKER CLEANER

"KLEENOFF"

FIBRE BRUSHES
RUBBER MOPS

"KAY-DEE" *

KETTLE DESCALER

* *For resale to the public, and in bulk for Works use.*

SALE & CHURCH, LTD.

7, CROMPTON WAY, CRAWLEY, SUSSEX.

FOR THE LOWER LIFTS OF GAS HOLDERS

HUMIDINE

IS NOW PRODUCED IN A NUMBER OF ATTRACTIVE NEW AND BRIGHT COLOURS

Such as

STONE - LIGHT and DARK GREY
BRIGHT GREEN - BRIGHT RED, etc.

'HUMIDINE' will outlast any other RUST prevention paint and costs far less

WRITE FOR SAMPLES OF SHADES and further details to the sole makers

ASPINALLS (PAINTS) LTD.

CARLETON - SKIPTON - YORKS.

'Phones: SKIPTON 548/9, ndh 567

APPOINTMENTS VACANT

The engagement of persons answering these advertisements must be made through a Local Office of the Ministry of Labour or a Scheduled Employment Agency if the applicant is a man aged 18–64 inclusive or a woman aged 18–59 inclusive unless he or she, or the employment, is excepted from the provisions of the Notification of Vacancies Order, 1952.

SCOTTISH GAS BOARD

KILMARNOCK GROUP

GROUP DISTRIBUTION SUPERINTENDENT

APPLICATIONS are invited for the position of GROUP DISTRIBUTION SUPERINTENDENT for the Kilmarnock Group.

The salary will be within A.P.T. Grade IX, Provincial 'A', £615 to £715 per annum, with placing according to qualifications and experience.

If essential, housing accommodation will be made available.

Applicants should possess the Higher Grade Certificate (Supply) of the Institution of Gas Engineers, or an equivalent qualification. Applicants should be experienced in all branches of gas utilisation and transmission at both low and high pressures. Sound training and experience in the planning, estimating and supervision of distribution systems is essential.

The post is superannuable and the successful candidate may be required to pass a medical examination.

Applications stating age, qualifications and experience, together with the names of two referees, should be addressed to the undersigned within fourteen days from the appearance of this advertisement.

ROBERT FIFE,
Group Manager.

Riverbank Gas Works,
Kilmarnock.
July, 1953.

SCOTTISH GAS BOARD

FIFE GROUP

BUCKHAVEN & LEVEN DISTRICT

APPLICATIONS are invited for the position of DISTRICT MANAGER for the above District and any extension thereof.

Applicants should be Corporate Members of the Institution of Gas Engineers, should have wide experience in the control, operation and administration of a medium-sized Gas Works.

The salary will be on a Scale £925–£1,125 per annum, with annual increments of £40 and placing will be according to qualifications and experience. A house, for which rent will be charged, will be available.

The successful applicant will require to pass a medical examination and will be required to join the Board's Pension Scheme.

Applications, endorsed "District Manager—Buckhaven and Leven" stating age, training, qualifications and experience, together with the names of two referees, should reach the undersigned on or before Saturday, July 24, 1953.

D. L. DICKSON,
Group Manager.

Gas Works,
Grange Road,
Dunfermline.

SCOTTISH GAS BOARD

WESTERN GROUP

PAISLEY DISTRICT

APPLICATIONS are invited for the following appointments in the Paisley Gas Works, which has an output of 6 million cubic feet of gas per day. Both appointments offer opportunities for men desirous of obtaining further experience on a large Works.

PRODUCTION SUPERINTENDENT

Grade A.P.T. IX (£615–£715 per annum).

Applicants should have had experience of modern production practice in Vertical Retorts and C.W.G. Plant, in the control of ancillary plant, including the installation and maintenance of such plant and should possess the Higher Grade Certificate of the Institution of Gas Engineers, or equivalent qualification.

A modern 5-apartment ground floor flat is available to rent.

JUNIOR TECHNICAL ASSISTANT

Grade A.P.T. I-VI (£165–£570 per annum)

Applicants should possess knowledge of modern production practice and hold the Ordinary Grade Certificate of the Institution of Gas Engineers, or equivalent qualification.

Placing on the Salary Scales will be in accordance with experience and qualifications and the successful candidate must subscribe to the Board's Superannuation Scheme and may be required to undergo medical examination.

Applications stating age, training, experience and qualifications, together with the names of two referees, should be lodged with the undersigned not later than July 18, 1953.

WM. C. CAMPBELL,
District Manager.

Gas Offices,
27, McKenzie Street,
Paisley.
July 3, 1953.

SCOTTISH GAS BOARD

GLASGOW DIVISION

GLASGOW DISTRICT

ENGINEERING ASSISTANTS

VACANCIES EXIST in the Engineer's Office of the Glasgow District for two ENGINEERING ASSISTANTS.

Applicants should have had general experience in a Drawing Office on mechanical engineering or civil engineering.

Salary will be within Grades A.P.T. V-VI (£460–£570) and placing within these grades will be in accordance with qualifications and experience.

The post will be superannuable and successful candidates will be required to undergo medical examination.

Applications endorsed "EA/EO" stating particulars of qualifications and experience together with the names of two referees should reach the undersigned on or before Monday, July 27, 1953.

D. F. YOUNG,
Divisional Controller.

Scottish Gas Board,
Glasgow Division (Glasgow District),
30 John Street,
Glasgow, C.1.

SCOTTISH GAS BOARD

LANARKSHIRE DIVISION

APPLICATIONS are invited from suitably qualified persons for the undernoted appointments:—

DIVISIONAL TECHNICAL ASSISTANT—UDDINGSTON

Applicants should have sound practical experience in the operating of Continuous Vertical Retorts, C.W.G. Manufacture, and be capable of carrying out efficiency tests on all standard units of Gas Works Plant.

The salary will be in accordance with Grade IX, Provincial 'A', of the National Salary Scales for Gas Staffs (£615–£715 × £20 per annum) with placing according to experience and qualifications.

SENIOR TECHNICAL ASSISTANT—HAMILTON DISTRICT

Applicants should have sound practical experience in the operation of Continuous Vertical Retorts, and be familiar with the technical control of a modern Gas Undertaking.

The salary will be in accordance with Grade VI, Provincial 'A', of the National Salary Scales for Gas Staffs (£490–£570 × £20 per annum) with placing according to experience and qualifications.

DISTRICT SUPERINTENDENT—MOTHERWELL & WISHAW DISTRICT

Applicants should have sound practical experience on all sections of a Distribution Department of a *Medium Sized Undertaking* and an intimate knowledge of High and Low Pressure Distribution and the Marketing of Domestic and Industrial Appliances. The salary will be in accordance with Grade VIII, Provincial 'A', of the National Salary Scales for Gas Staffs (£585–£665 × £20 per annum) with placing according to experience and qualifications.

The successful candidates for the above appointments may require to pass a Medical Examination and shall require to subscribe to the Board's Superannuation Scheme.

Applications addressed to the undersigned and suitably endorsed, should be delivered to the address given below not later than Monday, July 27, 1953.

JAMES M. DOW,
Divisional Controller.

Divisional Headquarters,
Bothwell Road,
Uddingston,
Lanarkshire.
July 3, 1953.

EASTERN GAS BOARD

(CAMBRIDGE DIVISION)

TECHNICAL ASSISTANT

APPLICATIONS are invited for the position of TECHNICAL ASSISTANT at Peterborough District.

Candidates should have experience in the technical control of continuous vertical retorts, carburetted water gas plant and ancillary plant, and possess the Institution of Gas Engineers Higher Grade Certificate in Gas Engineering (Manufacture).

The salary will be in accordance with A.P.T. Grade VI (Provincial "A") and the successful candidate will be required to pass a medical examination and become a member of the Board's Pension Scheme.

Applications giving full details of training and experience, together with the names of two referees, should be sent to the undersigned within fourteen days of the appearance of this advertisement.

J. HUNTER-RIOCH,
General Manager.

52, Sidney Street,
Cambridge.

(*Classified advertisements continued on page* 118)

APPOINTMENTS VACANT (ctd.)

WEST MIDLANDS GAS BOARD

DEPUTY SENIOR CHEMIST
ANALYTICAL LABORATORIES

APPLICATIONS are invited for the above post, which is located in Birmingham.

Candidates should possess an honours degree or equivalent and have had at least five years' experience in the gas or chemical industries.

The duties include analytical and investigational work and the supervision of such work.

The post is pensionable and the successful candidate will be required to pass a medical examination.

The salary will be within the range £900-£1,000 per annum.

Applications, stating age, qualifications and experience, together with the names of two referees, should be addressed to the Industrial Relations Officer, West Midlands Gas Board, 6, Augustus Road, Edgbaston, Birmingham, 15, to reach him within fifteen days of the appearance of this advertisement.

F. H. CURETON,
Secretary to the Board.

WEST MIDLANDS GAS BOARD

WOLVERHAMPTON AND DISTRICT
DIVISION
DRAUGHTSMAN—
DIVISIONAL DRAWING OFFICE

APPLICATIONS are invited for the above position, which is located at Dudley.

Experience in the design, construction and erection of plant is essential, and preference will be given to a draughtsman who has acted as Section Leader.

The salary will be according to Grade X (£665 × £25 —£765 per annum) of the National Salary Scales for Gas Staffs.

The post is pensionable and the successful candidate may be required to pass a medical examination.

Applications, giving full details of age and experience and the names of two referees, should be addressed to Mr. F. C. Briggs, Divisional General Manager, West Midlands Gas Board, Wolverhampton and District Division, Kensington House, Bath Street, Dudley, to reach him within fifteen days of the appearance of this advertisement.

F. H. CURETON,
Secretary to the Board.

WEST MIDLANDS GAS BOARD

WORCESTERSHIRE-HEREFORDSHIRE
DIVISION
HOME SERVICE ADVISER (FEMALE)
HEREFORD AND DISTRICT

CANDIDATES should have had at least two years training in domestic subjects and hold an appropriate diploma and have had some practical experience in demonstrating.

The salary will be in accordance with Grade V (£368-£432 per annum) of the National Salary Scales for Gas Staffs.

The post is pensionable and the successful candidate may be required to pass a medical examination.

Applications, giving details of age, education, qualifications and experience, together with the names of two referees, should be addressed to Mr. C. F. W. Rendle, Divisional General Manager, West Midlands Gas Board, Worcestershire-Herefordshire Division, 12, St. Nicholas Street, Worcester, to reach him within fifteen days of the appearance of this advertisement.

F. H. CURETON,
Secretary to the Board.

NORTH THAMES GAS BOARD

SENIOR DRAUGHTSMAN, experienced in the layout of steam raising and gas pumping plants, and the detailing of the necessary steel structures and pipework, is required in the Chief Engineer's Drawing Office, at Westminster. Starting salary within the range £645-£795 per annum.

The appointment is of a permanent nature and the successful candidate will be required to join the Staff Pension Scheme.

Applications, giving full particulars, should be sent to the Staff Controller, North Thames Gas Board, 30, Kensington Church Street, W.8, quoting reference 666/88.

NORTH WESTERN GAS BOARD

LIVERPOOL GROUP
PRINCIPAL CHEMIST—
GARSTON WORKS, LIVERPOOL

APPLICATIONS are invited from qualified persons for the above pensionable appointment at a salary within Grade A.P.T. XI (£690-£815 per annum), according to qualifications and experience.

Applicants should be members of an appropriate professional body, or possess a University degree, together with experience in the fuel industries.

Detailed applications, giving the names of two referees, should reach the Chief Personnel Officer, North Western Gas Board (Liverpool Group), Radiant House, Bold Street, Liverpool, 1, within fourteen days.

NORTH WESTERN GAS BOARD

MANCHESTER GROUP
DISTRICT SERVICE OFFICER—
MANCHESTER DISTRICT

APPLICATIONS are invited from suitably qualified persons, for the above pensionable position at a salary within Grade A.P.T. X (£665-£765 per annum).

District Service Centres serve approximately 30,000 consumers and the District Service Officer will be responsible for the administrative control and co-ordination of all aspects of consumer service within the area covered by the centre, including installation work, maintenance, showroom and enquiries, clerical work, stores control, receiving of accounts and district records.

Detailed applications, endorsed "District Service Officer," together with the names of two referees, should reach the General Manager, North Western Gas Board (Manchester Group), Town Hall, Manchester, 2, within fourteen days.

EDUCATIONAL

THE UNIVERSITY OF LEEDS

GAS PLANT MANUFACTURER'S
DEVELOPMENT COUNCIL SCHOLARSHIP

APPLICATIONS are invited for the above Scholarship of the value of up to £215 a year; in special circumstances a higher award of up to £280 a year may be made. The Scholarship is provided to enable promising students to follow an Honours course in either Gas Engineering or Chemical Engineering as preliminary training for entry into the Gas Plant Industry.

The Scholarship is open to applicants of British Nationality from school or from industry; among the latter preference will be given to candidates already engaged in the Gas Plant Industry.

Applications should reach the Registrar, the University, Leeds, 2, from whom further particulars and forms of application may be obtained, not later than July 30, 1953.

PATENTS

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1 off 10 h.p. Metro Vick 1440 r.p.m.
1 off 6 h.p. Metro Vick 730 r.p.m.
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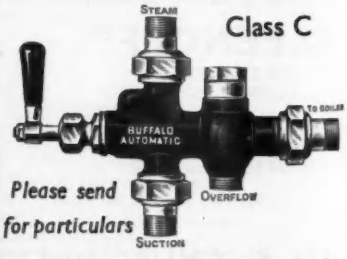

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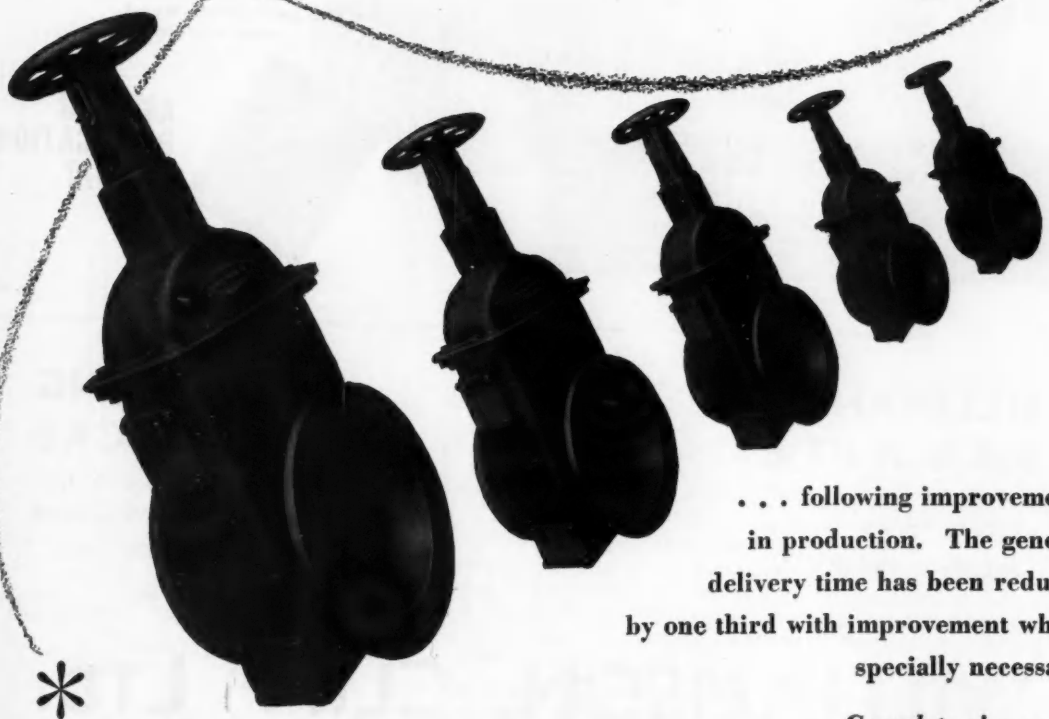

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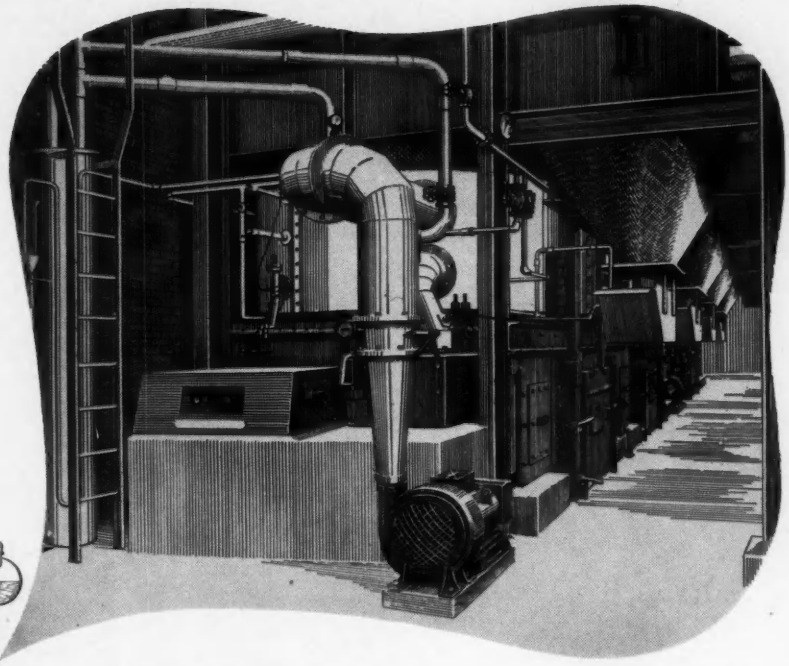
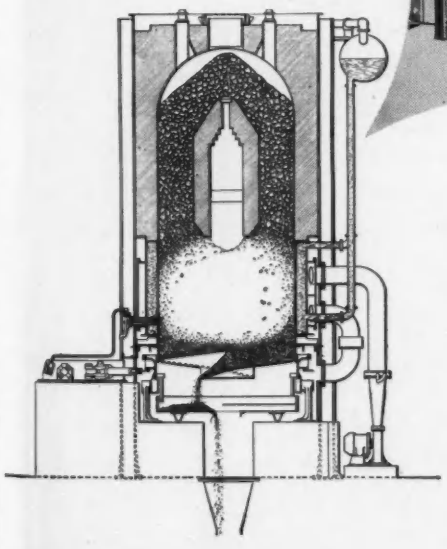
less labour, less fuel –
and the GAS STAYS HOT





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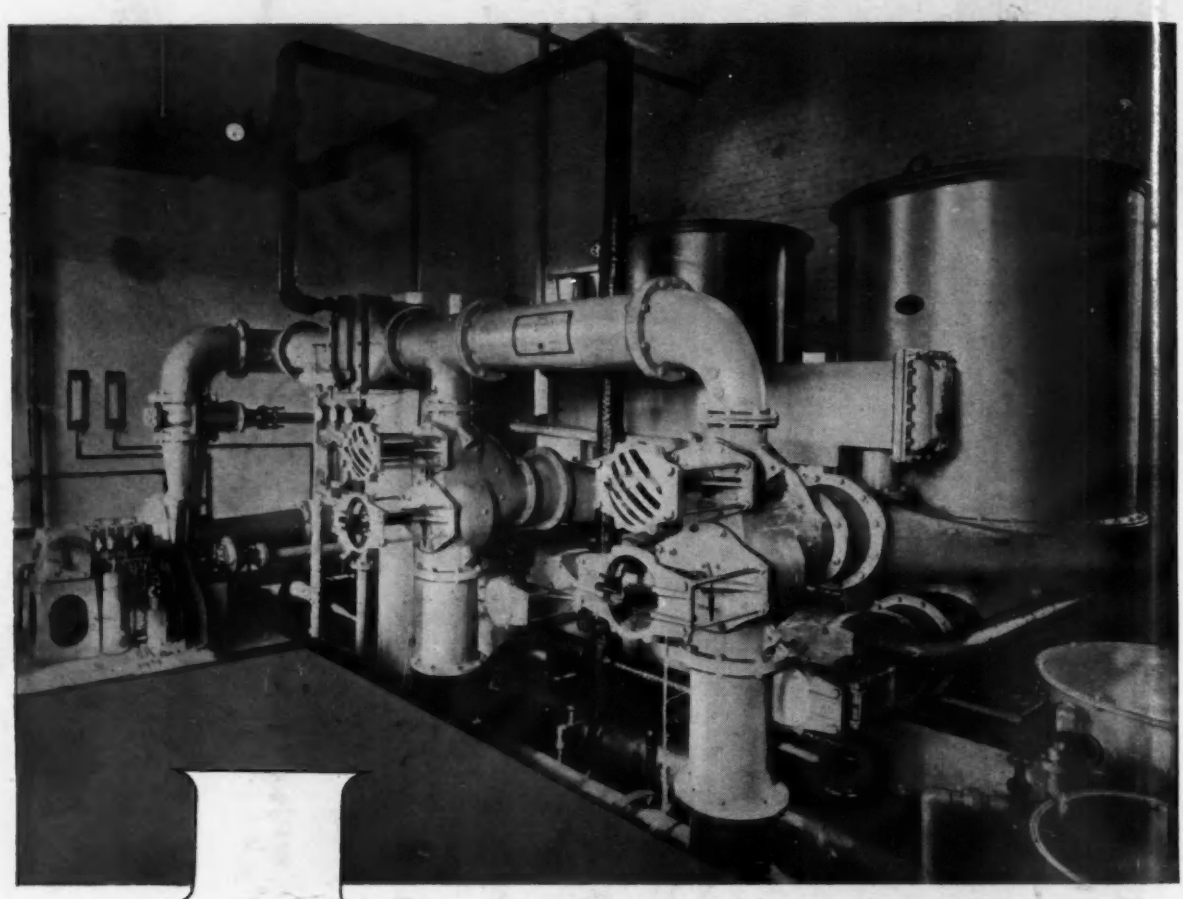

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